

# Marine Review

SHIP OPERATION

SHIPBUILDING

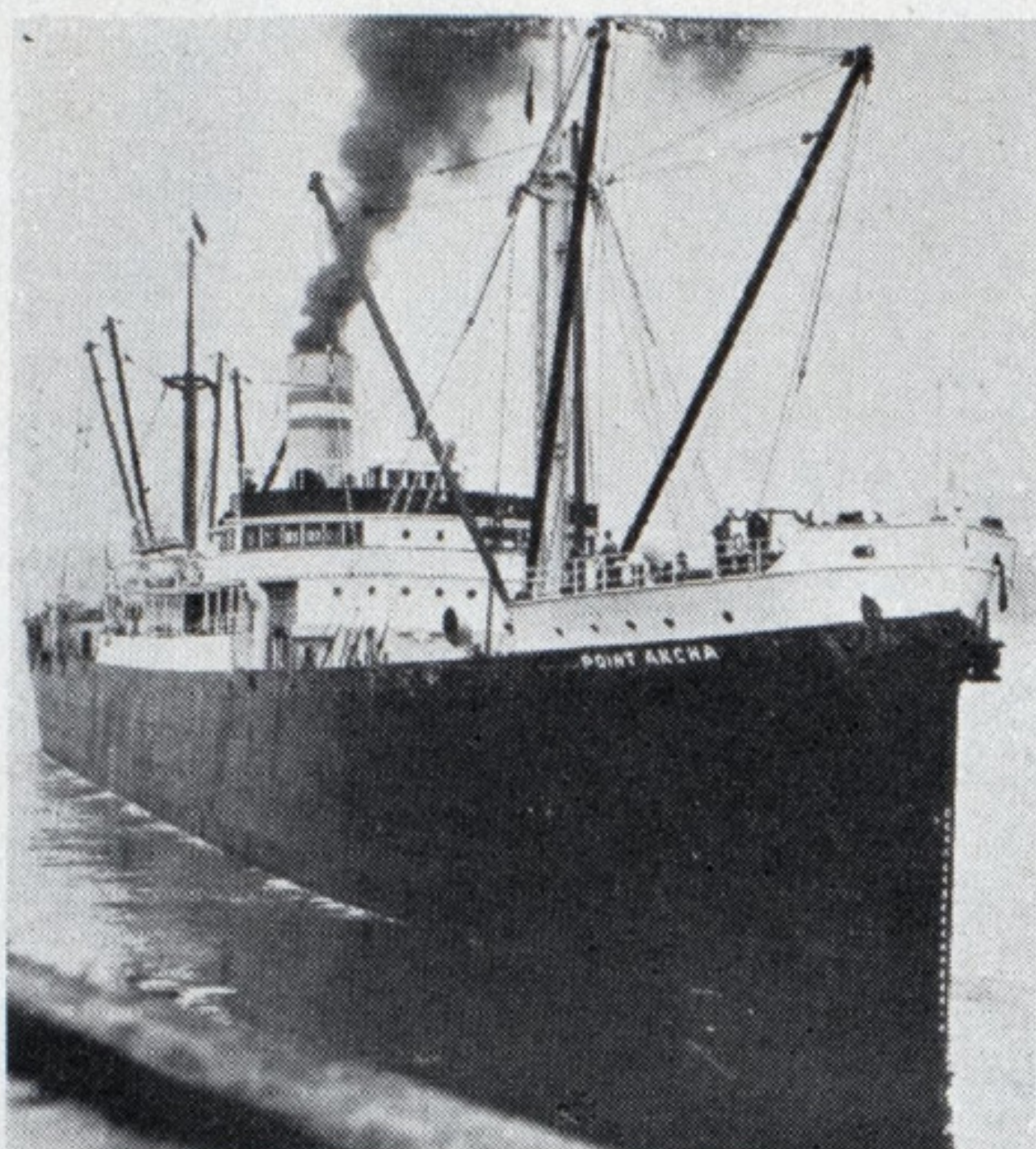
CARGO HANDLING

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# Marine Review

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## Senate Investigation Begins, Review Mail Contracts

**T**HE long heralded senate committee scrutiny of mail contracts entered into by the United States government with private American steamship owners is under way, beginning Sept. 26 in the senate office building at Washington. The committee which was authorized by the last congress to make this investigation is headed by Senator Hugo L. Black, Alabama. Other members of the committee are senators: William H. King, Utah, Pat McCarran, Nevada, Wallace H. White Jr., Maine, and Warren R. Austin, Vermont.

No sincere supporter of the American merchant marine will object to this review and investigation of mail contracts. The government as a party to these contracts has a right and a duty to see that the taxpayers' money is used for the welfare of the country as a whole.

It is, however, of the utmost importance that the committee in the course of its investigation should not invalidate the provisions of the merchant marine act of 1928 which has made possible the beginnings of a merchant marine adequate for our commercial needs and national defense. No one can question the sincerity, integrity and devotion to national welfare of any member of this committee, and it is difficult to believe that any action detrimental to the American merchant marine will be taken.

There is nothing secretive about the merchant marine act of 1928 and every mail contract and construction loan has been granted under the authority set up by congress. Each senator and congressman and the responsible executives of the government have had full and free access to all the terms and conditions of these contracts. In the execution of such a large program some mistakes may have been made. These can be adjusted without tearing

down the structure of the law.

Political affiliations have no bearing on the accomplishment of this objective. Certainly it cannot be said that republicans have ever in the history of the country been more seaminded than democrats. The act of 1928 could never have become a law without the support of a united congress. What has been accomplished since this act went into effect, must not be lost sight of in this investigation. These accomplishments should serve as the lode star of the investigation so that it will not depart from the true course of real American interests to play into the hands of those who wish to destroy our merchant marine as an effective agency of foreign trade.

Briefly this is what the law has accomplished. Forty-two ocean mail services under private American ownership have been established and maintained. Thirty-two new vessels of the finest ocean-going type have been built in American shipyards providing productive labor for American workmen. Twenty-six others have been thoroughly modernized and reconditioned. Under the terms of these contracts additional new vessels are to be built and others are to be reconditioned.

And what is this program costing the government? Under the mail contracts for the fiscal year 1932, subtracting cost for carrying the mail at a poundage rate, the net cost for the maintenance of these services in that period was \$19,164,337.71, according to the annual report of the postmaster general, 1932.

It must be borne in mind that this aid is paid in order to maintain and equalize the cost of building and operating ships under the American standard of living. Government operation has been thoroughly tried and discarded as a means of building up a merchant marine of our own. There is no other instrument then for accomplishing this purpose except through the private American ship operator. If this equalization aid is removed he can no longer act in carrying out the will of the American people.



# MARINE CODES,

## Preparation Underway, Nearing Completion

By A. H. Jansson

**W**HILE the shipbuilders and ship repairers are in full operation under the terms of the code for their industry signed by the President July 26 and are now actively engaged in the preparation and adoption of administrative rules and regulations, the steamship owners and the shipping industry generally, as this is written, have yet to propose a code. Much thought and effort, however, has been given this subject by the various organizations of the shipping industry throughout the past two months and it is confidently expected that comprehensive codes covering the industry will be submitted to the recovery administration in Washington, possibly before Oct. 1. It is understood that Deputy Administrator W. H. Davis, with whom shipping interests met on Sept. 7 for a preliminary discussion, is desirous of having a code or codes from the various shipping interests presented at the earliest possible date. It is believed that at least two important groups, the American Steamship Owners' association, New York, and the Lake Carriers' association, Cleveland, are now if not completely ready, very nearly so, to offer codes of fair practice. (See footnote.)



### Codes for the Shipping Industry

**S**INCE reporting in the September issue of MARINE REVIEW on the progress being made in the development of a shipping code, the most significant thing that has happened may be said to be near completion of the process of revising, modifying, adding to and eliminating from the tentative codes formulated up to that time. As this is written, however, no code from employers of the shipping industry has been presented to deputy administrator Wm. H. Davis, with the exception of the Canal Carriers Association Inc., covering waterline carriers operating vessels between Atlantic coast ports and inland lake or river ports via the New York State Barge canal or the St. Lawrence river.

A more or less chronological report of the progress toward the formulation of final drafts of codes which can be presented to Washington follows:

On Sept. 1, Admiral Cone, chairman of the advisory committee of the shipping board bureau, department of commerce, issued an invitation to a number of the country's representative steamship men to meet deputy administrator Wm. H. Davis of the national recovery administration for a preliminary discussion of a proposed shipping code. The meeting as scheduled was held at Washington on Sept. 7. A number of prominent shipping men attended and presented their views. Nothing definite was accomplished, but everyone went away feeling that the selection of Mr. Davis for this important office was a good one because of his open-mindedness and evident judicial temperament.

After a number of shipping men had pointed out the advisability of leaving control and regulation of the ship-

ping business with the shipping board bureau much as the railroads had been placed under a co-ordinator, Mr. Davis made it clear that whatever is done in the way of a code the shipping board will take part both as regards the formulation of a code and its subsequent administration.

Between the meeting in Washington Sept. 7 and Sept. 21, the shipowners continued with renewed activity to complete a code acceptable to the industry. On the latter date members of the executive committee of the American Steamship Owners' association held a meeting in New York which lasted until a late hour in the evening at which the report of a special committee for drafting a code was thoroughly discussed. The draft submitted by the committee at that time was said to be the twelfth that had been prepared because of objection raised by owners in the several groups making up the association.

What the terms of this latest draft are was not made public but an earlier draft is said to have included a basic minimum wage scale to cover all types of vessels with the exception of those operating on the Great Lakes and inland waterways. The minimum monthly rates of pay are said to have been: First officer, and first assistant engineer, \$140; second officer and second assistant engineer, \$120; third officer and third assistant engineer, \$105; boatswain and oiler, \$50; seamen AB and firemen, \$40; ordinary seamen and coal passers, \$30; chief steward, \$100; combination steward cook, \$85; first cook, \$70; second cook, \$50; mess boys and galley men, \$30; cabin stewards and waiters, \$35; and senior wireless operator, \$75.

Between these rates and those in mind by the men on board ship there is a wide variance and it may be that in the latest draft of the tentative code these rates have been advanced.

No question is imposed it is understood by the owners to the right of employees to organize and bargain collectively through representatives of their own choosing; also the child labor clause prohibiting the employment of minors under sixteen will be observed.

#### Hours of Work Specified

With respect to workers on docks including longshoremen, checkers, coopers and tally clerks, and excepting watchmen, not more than 44 hours a week will be allowed, no more than eight hours in any one day, with certain exceptions in finishing the loading and discharging of a vessel if additional men are not available. The minimum rates of pay for all dock workers is to be not lower than the basic day time wage scale effective on July 1 last and in no event less than 40 cents an hour, unless the hourly rate for the same class of work on July 15 was less, and then not to be less than the hourly rate of July 15, 1929, and in no case be less than 30 cents an hour. A minimum weekly pay was also established ranging from not less than \$15 in cities over 500,000 population to \$12 in towns of less than 2500 population; also there is to be no reduction in compensation for employees now receiving in excess of the minimum wages specified.

It is understood that the code also defines unfair practices which will be considered violations. Stabilization of rates and the formulation of rules covering the conduct of business in the several divisions of the industry are also provided for. To carry out these provisions an administrative body is to be set up known as the "code authority" which will be composed of representatives elected from each division and of the administrator and others appointed by the President. The code authority is to have the power

According to the latest information received, J. Caldwell Jenkins, chairman of the American Steamship Owners' committee for the preparation of a code of fair competition for the shipping industry, announced that the work is completed and that the code was to be presented to the administrator of the N. R. A. in Washington on Sept. 25. The code as submitted will tend to stabilize not only domestic but foreign shipping as well. Quick action on the part of Deputy Administrator Davis in calling for a hearing on the proposed code, so that it may be promptly approved and signed by the President, is expected.



to enforce the provisions of the code, hear complaints, promote arbitration of agreements and to provide for redress for violations of the code when necessary. It will also collect fees from subscribers to the code on the basis of tonnage operated to meet expenses.

The main point at this time seems to be that the shipowners have just about completed a code on which they are in virtual agreement. Shipowning interests on the Gulf and Pacific coasts are also said to be in agreement on this code, with the understanding that the specific problems in various sections will be adequately taken care of by regulations modified to suit the peculiar conditions in particular trades.

#### A Comprehensive Code Favored

In the preliminary stages of the formulation of a shipping code many prominent shipping men sincerely felt that the law never was intended to apply to their industry any more than it was to the railroads. Another important body of opinion in the shipping industry is decidedly in favor of the adoption of a comprehensive code as essential to the welfare of shipping as a whole, also that such a code should include intercoastal and coastwise lines so that established lines may be protected against indiscriminate rate cutting which has been a thorn in the side of this trade for years past. It is expected that when the shipowners' code is presented for public hearings in Washington, it will involve prolonged discussions, particularly on the part of labor and that it may take some time before an agreement is reached.

In the meantime Joseph P. Ryan, president of the International Longshoremen's association, has at the request of the deep water steamship lines represented in the New York Shipping association agreed to recommend to the membership of his association that the present wage agreement be extended until the shipping code situation has been settled. This recommendation Mr. Ryan pointed out has been made with the understanding that the International Longshoremen's association may revise the proposition already submitted when negotiations are resumed. Nothing is lost to the men by this agreement, he said, as they will have the right of representation before deputy administrator W. H. Davis if they cannot come to an agreement with the steamship companies. The proposal by the longshoremen called for the renewal of the existing agreement, with 85 cents per hour for a 44 hour week. Double time for all meal hours worked and \$1.30 for all other time, as compared with 75 cents and \$1.10 per hour in the present agreement.

#### Lake Carriers Considering Code

REALIZING that their conditions are completely different from ocean operation, the lake carriers are preparing a code of their own. In the meantime they have already agreed to an increase of 10 per cent in pay on lake vessels which went into effect on Sept. 1, and is said to have affected 6000 employees.

Every effort is being made by the lake carriers to reach an agreement on a code to present to the national recovery administration. On Sept. 22, an executive committee of the Lake Carriers' association held a meeting in Cleveland, at which a tentative draft of the proposed code for lake shipping interests was thoroughly discussed. Certain revisions, changes and additions were agreed upon. It was also decided at that meeting to call a general meeting of representatives of all the ship operating companies on the Great Lakes to be held in Cleveland, Sept. 27.

At this meeting every effort will be made to come to an agreement on a code of fair practice for the industry, so that a draft may be presented to Washington at the earliest possible moment.

It is evident that there is some restiveness on the part of different labor organizations in the marine industry because of what they claim is an undue delay on the part

of their employers in preparing and submitting a code or codes for the shipping industry. The national recovery administration itself is desirous of prompt action on the part of the industry and it is reported that prior to Sept. 15 the office of the administrator sent out questionnaires to all vessel operators, asking what was being done in the preparation of a code or codes.

All of this points to action of some kind in the near future with respect to a shipping code. That there will be lively and long discussions when the public hearings are held in Washington is to be expected. It may be that an agreement will be reached promptly.

#### Shipbuilding and Shiprepairing Rules

ON SEPT. 22 President Roosevelt signed a modification of the code for the shipbuilding and ship repairing industry (see September MARINE REVIEW for complete text of code) enlarging the planning and fair practice committee to ten members, six named by the industry and four named by the President. The four members of the code committee named by the President are: William H. Davis, representing General Hugh S. Johnson, administrator of the National Recovery administration; Capt. Henry Williams, representing the secretary of the navy; Robert L. Hague, president of the Standard Shipping Co., representing consumers; and Joseph McDonagh, representing labor.

The six members of the code committee elected by the industry are: H. G. Smith, president, National Council of American Shipbuilders, chairman; Joseph Haag Jr., Todd Shipyards Corp.; S. W. Wakeman, Bethlehem Shipbuilding Corp. Ltd.; Roger Williams, Newport News Shipbuilding & Dry Dock Co.; Robert Haig, Sun Shipbuilding & Dry Dock Co.; and W. H. Gerhauser, president of the Great Lakes Shipbuilding & Repair association.

This committee has drawn up a set of proposed administrative rules and regulations. A hearing on these proposed rules and regulations, as this is written (Sept. 25), was to be held in Washington on Sept. 26. At this hearing all persons or groups having a substantial interest in the operation of these rules were to be given an opportunity to be heard.

Any shipbuilder or ship repairer not yet operating under the code may participate in the benefits of the code by applying to the code committee. The rules proposed by the code committee called for the segregation of shipbuilders into the following geographical districts or groups; Atlantic coast, Gulf coast, Pacific coast, Great Lakes, Mississippi and tributary rivers, and other major groups that may come under the code. To assist the code committee in the administration of a code, a ship building committee of not less than nine members shall be elected; five members from the Atlantic coast; one from the Gulf coast; one from the Pacific coast; one from the Great Lakes; and one from the Mississippi and tributary rivers. The president of the National Council of American Shipbuilders shall be chairman of this committee, but without right to vote.

#### Will See that Rules Are Enforced

Generally speaking the shipbuilding committee is to obtain from the various shipyards all the information required by the code committee, as to the operation and observance of the code. This will include reports on wages, hours of labor, conditions of employment and number of employees. The committee will also recommend to the code committee proposed modifications, of and additions to or exceptions from the code. It will also consider and try to adjust all complaints arising from the operation of the code. The duties of the committee are somewhat further elaborated in detail, including supervision of the adherence to the code by the members of the industry.

The ship repairing industry is to be segregated into the following major geographical districts; Atlantic coast, Pacific coast, Great Lakes, and Mississippi river and tributaries. Ship repairers on the Atlantic coast will be further

(Continued on Page 26)



# Cherbourg Develops Port Facilities for Docking Transatlantic Liners

By Vincent Delport

ON JULY 30, an important extension to the port of Cherbourg, enabling transatlantic vessels to berth at the railhead, was inaugurated by the president of France. Since the end of the eighteenth century Cherbourg was known primarily as one of the principal naval ports of France. The breakwater, over two miles long, which protects a magnificent roadstead of 3705 acres, was commenced under Louis XVI. The naval port itself was completed by Napoleon, who also created a dockyard and arsenal.

## A Leading Naval Base

The special character of Cherbourg as a naval base has, to some extent, interfered with the development of the harbor for commercial purposes. Since the end of the nineteenth century, however, Cherbourg has been consistently used as a port of call by a number of transatlantic companies, and it is claimed that the tonnage of shipping entering and clearing the Cherbourg roads is second only to that of Marseille, the largest seaport of France. Actually, the first steamship leaving the shores of France on a regular service to America left from Cherbourg on July 21, 1847, because the commercial port of Havre was not then sufficiently advanced to berth the ships, nor was there sufficient protection for them.

Later, in 1869, the Hamburg-American Line began using Cherbourg as a regular port of call, and was soon followed by the Royal Mail Steam Packet Co., and later by others.

However, there were no facilities for disembarkation of passengers and freight, save by tender, and all that Cherbourg could offer, but did offer completely whatever tide or weather might be, was efficient protection within its roads.

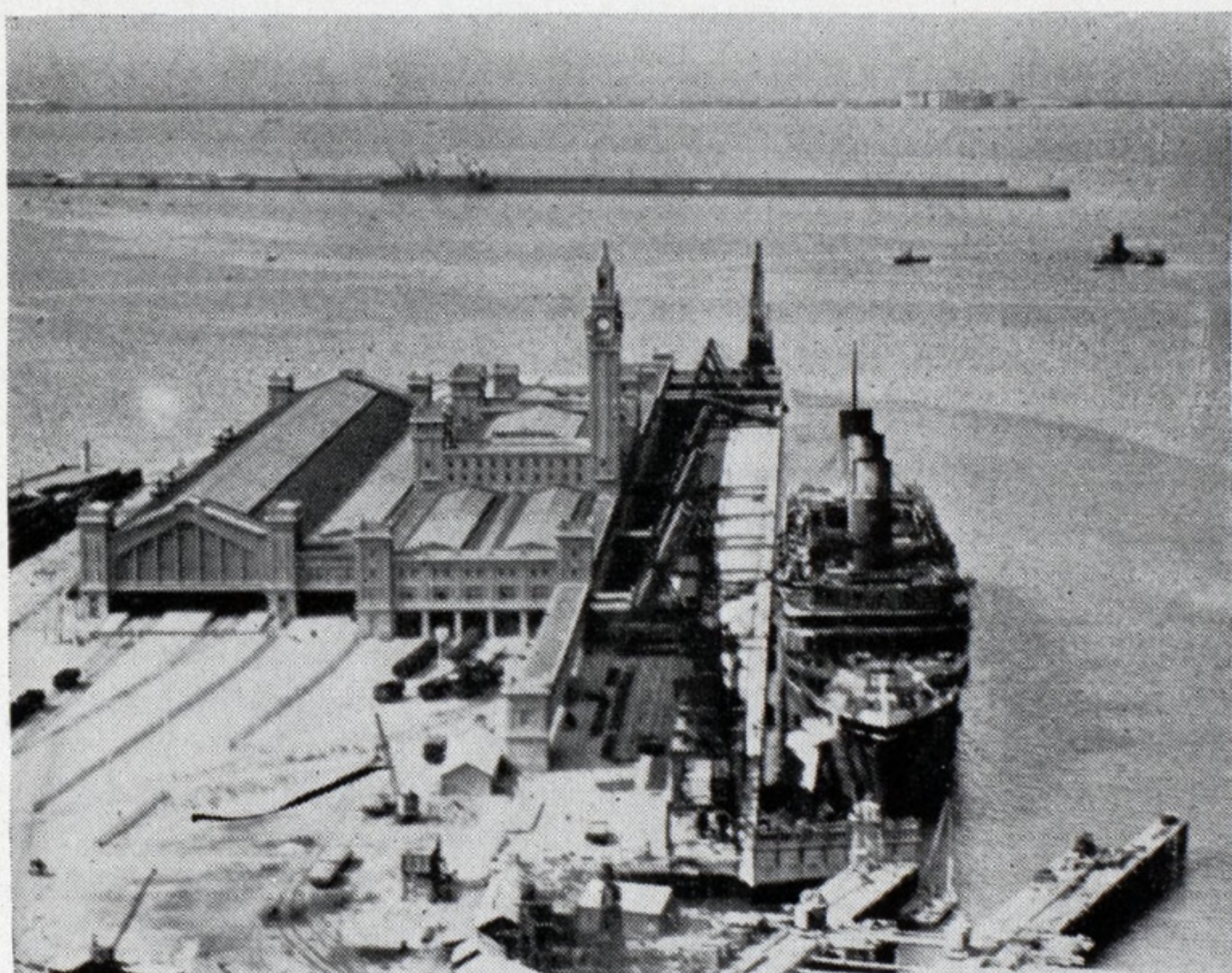
In view of the increasing importance of this transit trade, the chamber of commerce of Cherbourg took the initiative in 1919 of preparing plans for docks, quays and a maritime station to enable the largest transatlantic vessels to berth and disembark passengers and freight at the railhead. The chamber also took the necessary measures for financing

the greater part of the scheme.

The complete plan provides for a railroad depot so that trains may pick up passengers and freight direct from the ships for transportation nonstop to Paris in 4 hours and 5 minutes, and with three docks with spacious quays and modern handling equipment. That part of the extension which is now completed comprises the railroad depot, the transatlantic dock and one quay complete, on which the depot is built. Work on the second quay, on the other side of the dock, has also begun.

Protection for shipping is assured by a long breakwater in the center,

General view of the new transatlantic depot and dock at Cherbourg. The breakwater protecting the harbor is shown in the background



Train shed on the new transatlantic dock at Cherbourg. From this dock trains run nonstop to Paris in four hours and five minutes

the Querqueville breakwater on the left, and the Tourlaville breakwater on the right. The western pass, which is utilized for the larger ships, is just over 1200 yards wide, and has a depth of about 40 feet, which is the average depth of the roads. It is further to be noted that there are practically no movements of the ground beneath the sea, and therefore maintenance by dredging need not be considered to any great extent.

## Commercial Port Facilities

The present commercial port of Cherbourg, apart from the new extension, comprises two docks connected by a lock south of the new extension. These are used for cargo boats entering and clearing with import and export merchandise. Northwest of the town is the dockyard and arsenal,





*New quay and depot at Cherbourg. A vessel is berthed alongside the quay and one of the flexible covered gangways is shown connecting ship to depot*

from the extremity of which juts out the Homet pier, which is 65 feet wide, and which is utilized as a coal port on a length of 1640 feet; vessels with a draft of 26 feet can be accommodated at all tides. This port is also used for bunkering ships. Along the Querqueville breakwater, which closes the western extremity of the roads, is installed an oil station, connected by a pipe line to storage tanks at Hainneville; these tanks themselves are connected to the railroad depot at Equeurdreville by another pipe line. Tankers having a draft of 36 feet can be accommodated.

The new extension, at the northeast extremity of the old docks, and known as the port of Mielles, is protected within the roads by the breakwater of Homet on the left, and that of Les Flamands on the right. It is constructed on the spot of the old sand beach, a new beach being provided for west of the harbor. The inner roads limited by these two breakwaters has an area of 925 acres, and the amount of rocky surfaces requiring to be blasted is relatively small. Within the inner roads, ships have maneuvering space within a radius of 2625 feet.

#### **New Transatlantic Dock**

The plans for the new harbor were passed by the French ministry of public works in 1921, and work commenced in 1924. When completed, the port will comprise three docks about 1970 feet long, and a width ranging from 555 to 775 feet. The quays limiting these docks will have an area about equal to that of the docks themselves.

The completed dock, or transatlantic dock, is 2033 feet long and 775 feet wide; it has an area of 34.5 acres and is surrounded by 4865 feet of quays. The depth under maximum low water is 42.5 feet in the northern half of the

dock, and 39.5 feet in the Southern half, while along the southern quay it will not be less than 34.5 feet. Only a little blasting had to be resorted to to obtain these depths, most of the work having been done by dredging. About 150 million cubic feet of sand, gravel and clay were removed.

The walls of the quays have their foundations on hard rock, from 36 to 46 feet below low water level. They are formed by a vertical facing of concrete 20 feet thick for the western and eastern walls, and 17 feet for the southern wall. This facing is continuous from the foundations up to high sea level. The walls are embedded in the rock to a depth of about 20 inches. The pressure against this outer concrete wall facing is only exerted against the lower portion, up to the level where the sea washes both sides of the quay.

Quay No. 1, on which the railroad depot is erected, was built inside the concrete facing by means of caissons 115 feet in length, 20 feet wide and 52 feet high; these caissons were forced into the rock foundation to a depth of 20 inches. The quay itself was erected on top of these caissons. It took three years to complete the quay, and required 3,131,445 cubic feet of concrete. This quay is able to accommodate at one time two transatlantic vessels of the largest tonnage. Embarking and disembarking of passengers and freight may take place simultaneously due to the special equipment that has been provided in connection with the railroad depot.

#### **Quickness of Dispatch**

This depot has been erected with a view of saving valuable time during which vessels are berthed. The building comprises two floors, baggage and freight being handled on the lower floor, and travelers being accommodated on the upper floor. Covered movable

gangways convey passengers from the ship to the station, or vice versa. There are nine such ganways, which can travel along two rails parallel to the quay wall and to the depot building.

These gangways are 13 feet wide and are divided into two halves by a hand-rail. One half is used for the passengers, and the other half conveys hand baggage by means of an extension belt conveyor. The extremities of the gangways toward the quay can oscillate so that they can be adjusted according to the tide and to the size of the vessel. These extremities can be completely lifted up in order to give way to the cranes that move alongside the quay on their own sets of rails. These cranes handle heavy baggage, mails and automobiles; the former are placed on special trucks, and the latter are available to their owners who can reach the main road to Paris by a special roadway extension that abuts the depot. Special railroad lines connect the quayside depot to the main Paris line.

The depot building itself covers an area of 30,000 square yards; the main portion of the building is 920 feet long and 138 feet wide, and the passenger hall is 785 feet in length. Water tanks are provided for on top of a number of square towers, and the clock tower is 230 feet high. The waiting rooms, customs offices and visitation hall, passport and other passenger and railroad offices are on the upper floor, with large corridors allowing for the flow of passengers. Special halls are reserved for immigrants. The principal halls are duplicated, north and south of the transverse axis of the building, so that embarkation and disembarkation of two vessels can be effected simultaneously. Three gangways 23 feet wide, served by electrical elevators, conduct the passengers to the lower floor where they board the





*New quay and depot at Cherbourg showing how the flexible gangway serves for variation in tide and size of vessel*

trains, or reach the covered roadway, which is 50 feet wide and links up with the main Paris road.

The embarking hall for the trains adjoins the western side of the main building. The roof is 65 feet high; the length of the hall is 787 feet and the width 118 feet. This hall covers four main lines of track and three platforms, and a fifth line of tracks runs outside the hall on the western side. On each side of the hall are offices for railroad officials handling services that are not directly concerned with the passengers, also the fire brigade, central heating and electrical plant, etc. The whole frame of the depot building is in re-enforced concrete filled with bricks and molded granite slabs which have been polished by sandblasting. The roofs are covered, some with copper sheathing which in the salt air becomes oxidized to a light green color, and some in concrete.

When quay No. 2, which is on the other side of the transatlantic dock, is completed, it will be used mostly for freight traffic; the southern quay at the end of the dock will be 794 feet long, and will be mostly equipped with a plant for ship repairs.

The leading spirit in all this development of the Cherbourg harbor has been C. Th. Quoniam, who is president of the Cherbourg chamber of commerce. The cost of the completed portion of the scheme, including the transatlantic dock, quay No. 1 and the depot building with the necessary plant and equipment, is about 15 million dollars at par. The following figures give an idea of the importance and growth of Cherbourg as a commercial port:—

At present about 200,000 passengers transit through Cherbourg annually; 600,000 bags of mail are handled and more than 20,000,000 tons of shipping enter and clear the port. On some days seven or eight transatlantic vessels call at Cherbourg. In 1900, 378 passenger steamers called at the port with 30,313 passengers, and the total tonnage of shipping was 1,651,884. In 1913 there were 555 passenger steam-

ers with 68,678 passengers, and a total of 4,503,653 tons of shipping. In 1920 there were 212 passenger steamers with 75,529 passengers, and the total tonnage of shipping was 4,852,000. Since then the figures increased almost consistently until in 1930 they reached 946 passenger steamers with 183,786 passengers, and a total tonnage of shipping of 25,529,264 tons. The largest number of passengers however, was in 1929 with 203,992. In 1930 the total number of ships entering and clearing the port was 3199 with 307,237 tons of merchandise. Cherbourg is also an important fishing center, the value of this trade representing annually about \$675,000.

About four miles from the transatlantic railhead is a military aerodrome which it is intended to equip for the use of passengers wishing to travel by air. This airport is already used regularly for air mail service to Basel and Cologne.

## Steamship Company's Profits

Profit, after interest and depreciation but before federal taxes, of the American Hawaiian Steamship Co. for the month of July amounted to \$105,818 compared with a loss of \$4928 in

July, 1932. For the seven months ended July 31 this year the profit before federal taxes was \$194,999 as compared with a loss of \$530,177 in the first seven months of 1932. The above figures do not include capital gains or losses and are subject to adjustments at the end of the year.

The Merchants & Miners Transportation Co., Baltimore, declared a quarterly dividend of 40 cents to stockholders on record on Sept. 16. The previous quarterly dividend paid was at the rate of 37½ cents per share.

Directors of the Eastern Steamship Lines Inc., Boston, recently voted to call for redemption on Oct. 2, of one-half of outstanding first preferred shares at 105. The number of shares to be redeemed was 11,339. A regular quarterly dividend was also declared on first preferred at \$1.75 and 87½ cents on no par preferred stock.

For August the American Hawaiian Steamship Co. showed a net profit from operations after allowing for depreciation and after capital gains or losses and before federal income taxes of \$204,097 as compared with a loss of \$5141 for the same month a year ago. For the eight months ended Aug. 31 the net profit after allowing for depreciation and after capital gains or losses was \$399,096 compared to a loss of \$535,318 for this period in 1932.

## Shipping Board Advisors

Secretary of Commerce Roper on Sept. 20 announced that Major General Charles McK. Saltzman and Thomas M. Woodward had been elected vice presidents of the Merchant Fleet Corp. and that with Rear Admiral H. I. Cone they would serve on a permanent advisory board to the secretary in carrying out the functions of the United States shipping board. Admiral Cone will continue as chairman of the committee.

This committee supersedes the temporary advisory committee named on Aug. 10 when the shipping board was placed in the commerce department.

*Baggage examinations at the customs offices on the upper floor of the new transatlantic dock at Cherbourg*





# Accidents in the Shipping Industry

## Reduced by Careful Supervision

By R. R. Howard

**D**URING the past five years there has been material progress in the control of accidents in the marine industry; that is, if we can accept as an index the comparative annual accident experiences of the respective groups which have been reporting during these five years to the National Safety council. A good many of the units in each of these five groups are identical; but not all of them. For the year 1932 there were accident reports from 56 different marine industry units, with an average of 53,258 employees who worked a total of 106,379,000 man-hours. These units were in the following five groups: shipbuilding and repairs, 26 units; tankers, 15 units; harbor equipment, 9 units; stevedoring, 4 units; liners, 2 units.

As compared with the group which reported in 1927, the 56 units reporting in 1932 reduced the frequency of their disabling injuries by nearly two-thirds; and the severity of their disabling injuries by more than one-fourth. Also, the 1932 accident experience of the marine industry, as compared to 1931, was especially favorable—with a drop of 31 per cent in accident frequency, and 25 per cent in accident severity.

### Considerable Improvement Possible

This, of course, does not prove that the marine industry cannot make considerable more progress in accident control. Although the marine industry did decrease its accidents more than most industries during 1932, it is still down to twenty-second place among the 31 industries whose 1932 accident experience was classified by the National Safety council; and down to twenty-sixth place in the severity of its accidents. This entire group, representing 3937 industrial units, had an average accident frequency rate (number of disabling injuries per 1,000,000 man-hours of exposure) of 13.20; and an average accident severity rate (number of days lost from disabling injuries per 1,000,000 man-hours of exposure) of 1.59. By comparison, the marine industry had a frequency rate of 17.24; and a severity rate of 2.14. In contrast, here are the accident frequency rates of some of the groups in industries which are usually considered quite hazardous: Cement 4.65; machinery 7.76; steel 10.19; railway car and equipment 11.12; sheet metal

13.13; quarry 16.56. Also, all of these industries, with the single exception of quarry, had decidedly more favorable accident severity rates than the marine industry.

The comparative accident rate for the five different groups of the marine industry is quite interesting. The harbor equipment group had an accident frequency rate less than one-half the average for all the groups, though their severity rate was only a little less than average. The two groups, shipbuilding and repairs, and tankers, had about average accident frequency rates, though the severity rate of the tankers' group was nearly twice the general average. The stevedoring group had nearly twice as many accidents as the average, and the liners group more than twice as many, though the severity rate of the stevedoring group was less than one-fourth of the average and the severity rate for liners was less than one half.

### More Accidents in Small Units

It is also interesting to note that small units in all groups had more than twice as many accidents as the large units in all groups. The best proof of the possibilities of safety work in the marine industry is afforded by an examination of the reports of units of approximately the same size in the same group. For example, the 1932 accident frequency rates among the thirteen large units classified under "shipbuilding and repairs" vary from 3.58 for the

United States navy yard at Norfolk, Va., with the best accident frequency record, to 43.15 for the unit with the poorest record. Five different units in this group had 1932 accident frequency rates under 10; and three units in this group had accident frequency rates above 30.

There is a like contrast between the records of different units in the "tankers" group, where the best 1932 accident frequency rate among large units was 7.41; and the poorest record, from a unit with about the same number of employees, was 48.25.

It is unfortunate that the companies which reported to the National Safety council did not supply information on the causes of the accidents which produced the injuries. As one detailed study in this field, the department of labor and industry of Pennsylvania has reported the following tabulation covering compensated injuries in canal and navigation companies in Pennsylvania for the year 1931. Listed in order of importance, the reported causes of injuries in 93 reported cases are as follows: handling objects 35; vehicles 15; falls of persons 12, falling objects 11; elevators, hoists and conveyors 6; stepping upon or striking against objects 6; using hand tools 3; miscellaneous 3; machinery, prime movers, etc. 2.

### Honor Roll for 1932

The National Safety council, in its 1932 report on "Accidental Injury Rates in the Marine Industry" list on their "honor roll for 1932":

*Atlantic Coast Line Railroad*—which in its harbor equipment division at Norfolk, Va., worked more hours without a disabling injury than any other unit with a perfect record in its group—a total of 45,000 hours. It also made the best 1932 record among stevedoring units, through its Norfolk, Va. organization, which worked 221,000 man-hours without a disabling injury.

*United States Navy*—in which the Norfolk, Va. yard made the lowest 1932 frequency rate (3.58) among large shipbuilding and repair units. The Mare Island, Cal., yard made the lowest severity rate (.19) among large shipbuilding and repair units. The Boston Navy yard made the largest improvement in frequency since 1930 (a total of 78 per cent) among large shipbuilding and repair units; and also the greatest total reduction

**TOO MANY COOKS  
SPOIL THE BROTH**



**TOO MANY  
SIGNAL MEN  
CAUSE ACCIDENTS**

NATIONAL SAFETY COUNCIL



in severity rates—87 per cent.

New York, New Haven and Hartford Railroad Co.—through the Harlem River Marine shop worked more hours during 1932 (a total of 146,000) without a disabling injury than any other small shipbuilding and repair unit with a perfect record.

Through the courtesy of W. P. Biggs, navy department safety engineer, we are able to report some details in the program which enabled the United States navy—through the respective yards at Norfolk, Va., Mare Island, Calif., and Boston—to be listed on the “honor roll for 1932.” Mr. Biggs reports that the most frequency injuries with which he had to deal were hand and foot injuries. The accidents which contributed to these injuries were “many and varied—mostly failure of employees to use good judgment; and seldom is there a mechanical failure.”

He reports that each accident is investigated; and those of a serious nature are investigated by a board of inquiry which holds a court, calls witnesses, and attempts to ascertain from the testimonies the cause of the injury, and makes a recommendation of “remedies.” Each master (superintendent) must make a written report as to how the accident occurred, why it occurred, and what has been done to prevent a recurrence.

#### Taking Safety Seriously

The navy department safety engineer, with headquarters at Washington, D. C., is the directing head; and at each of the navy yards and stations a naval officer is detailed as safety engineer. In some cases there is a civilian assistant; and each yard has the usual safety committees which differ only in detail. There are many mechanical safety devices in use; and these safety devices, and all work which is related to them, is closely regulated by compact little booklets of safety rules. These include the following: *General Safety Rules; Machinery and Its Control; Transportation; Industrial Poisons and Dangerous Substances; Scaffolds; Safety Rules Governing the Storage, Handling and Use of Gases, Liquids and Equipment for Welding and Cutting; Safety Standard for the Protection of the Head, Eyes and Respiratory Organs.*

At least once each year the department safety engineer makes an inspection, and the local personnel at each yard carries on constant safety inspections. All workers who require protective clothing are furnished with the articles needed.

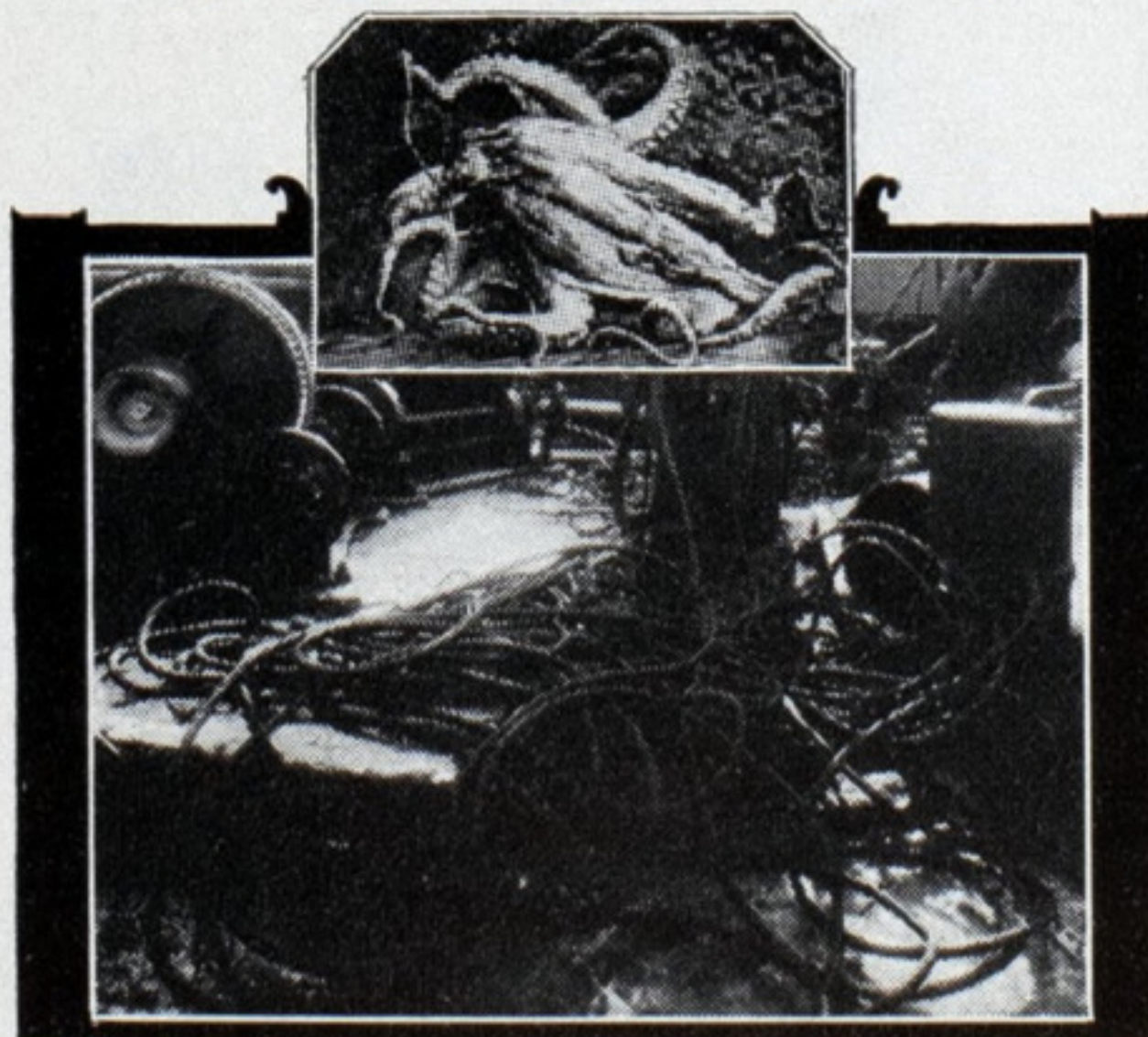
Following are items which it is considered desirable by the department to keep in supply: Helmets to firemen when necessary; rubber boots and oil-skins to laborers who in the performance of their ordinary duties do not require such articles; goggles



to various workmen, such as acetylene welders, cutters, electric welders, electric furnace operators, boiler-makers and men engaged on chipping, scaling or dusty operations; helmets or hand-shields to electric welders; breathing apparatus for sand-blasters, acetylene welders, paint sprayers, electric welders, when working in confined spaces, and other occupations where necessary.

Other items kept on hand are: Helmets with air supply for sand-blasters; leather or asbestos gloves for electric or acetylene welders or cutters; leather gloves for foundry sand-blasters, casting chippers and handlers, etc.; rubber goggles and gloves to men working in strong acids, alkali etc.; scrap canvas for issue to shipsmiths and anglesmiths, for making rough aprons for protection of clothing from damage during their work; aprons not to be made up by the government, but the smiths themselves to form rough aprons from the scrap material.

## WORSE THAN AN OCTOPUS



**DANGER LURKS IN UNCOILED LINES**  
NATIONAL SAFETY COUNCIL

It is planned that the old workers shall instruct new ones in safety; and the new workers are trained in safety by the local master and by the local safety engineer and by the educational material of the department. Records of employees are kept, to show up accident repeaters, and the efficiency marks of such employees are lowered in accordance with set rules. This efficiency record determines whether the employee stays on or is let out when a layoff comes, and sometimes an employee is given time off without pay for breach of safety regulations. An employee rarely is discharged, since the safety department believes in “rewarding for a good record rather than punishing for a bad one.” Accordingly, when a shop goes for three months or more without an accident, the efficiency mark of each man is raised by a given amount.

Interest in safety among employees is maintained by “constant plugging.” It is believed that competitions in safety are desirable, coupled with awards and other means of recognition of safety records. Safety bulletins and posters, both general and local in color, are used. Toward the control of accident hazards among truck drivers, all chauffeurs are examined before given their position, and the holding of their positions depend on their records. Group competition in safety among drivers is planned and all drivers “are very proud and jealous of their records.”

#### Accidents Are Reduced

The remarkable results from this program of accident control is shown by contrasting the 1932 safety record of three of the “honor roll” yards of the navy department with the 1926 accident experience of these same yards. For example, the Norfolk yard in 1926 had 3172 employees who worked a total of about 6,700,000 man-hours, and reported 237 accidents which gave them a severity rating of 35.3. In contrast, this yard in 1932, with 3624 employees working 7,259,000 man-hours had only 26 accidents, and a severity rate of 3.6. The Mare Island yard in 1926 had 2802 employees working 6,559,000 man-hours and had 68 accidents with a severity rate of 10.4. In 1932 this yard with 3673 employees working 7,149,000 man-hours, had 39 accidents and a severity rate of 5.5. The Boston yard in 1926 had 2860 employees working 6,157,000 man-hours, with 244 accidents and a severity rate of 39.6. In 1932 this yard had 1593 employees working 3,009,000 man-hours and had 23 accidents, with a severity rate of 7.6.

These contrasted accident rates seem to prove conclusively that accident rates in the marine industry can be improved.



# SELF UNLOADER

## Conversion from Lake Bulk Freighter

JUDGING by favorable results in actual operation the self-unloading vessel has become increasingly popular on the Great Lakes. In the April, 1932, issue of MARINE REVIEW an article appeared on the conversion of three lake freighters to modern self-unloading vessels. At the time, this large project might well have seemed daring to the point of rashness, but subsequent events have fully demonstrated the foresight of the sponsors. Completely satisfactory mechanical operation and their practical usefulness as cargo carriers, not limited by shore facilities for unloading, made it possible to keep these vessels steadily and profitably employed throughout the season of 1932 at a time when lake shipping as a whole was at an extremely low point.

These vessels, the DIAMOND ALKALI, THUNDER BAY QUARRIES and DOW CHEMICAL (ex-WM. T. ROBERTS), owned by the American Steamship Co., Buffalo, Boland & Cornelius, manager, and S. E. Smith, marine superintendent, in operation now for nearly two seasons may be said to be in a class by themselves for efficient handling of bulk material and particularly coal, where avoidance of breakage is of vital importance. Not only are they excellent carriers from a capacity point of view, but cargoes are unloaded with a dispatch second to no other method of unloading afloat or ashore.

### Fourth Self-Unloader Ordered

With the present season already well advanced, early in June, the need of increased tonnage became apparent to the owner of the three self-unloaders referred to, and a contract was placed with the American Ship Building Co.,



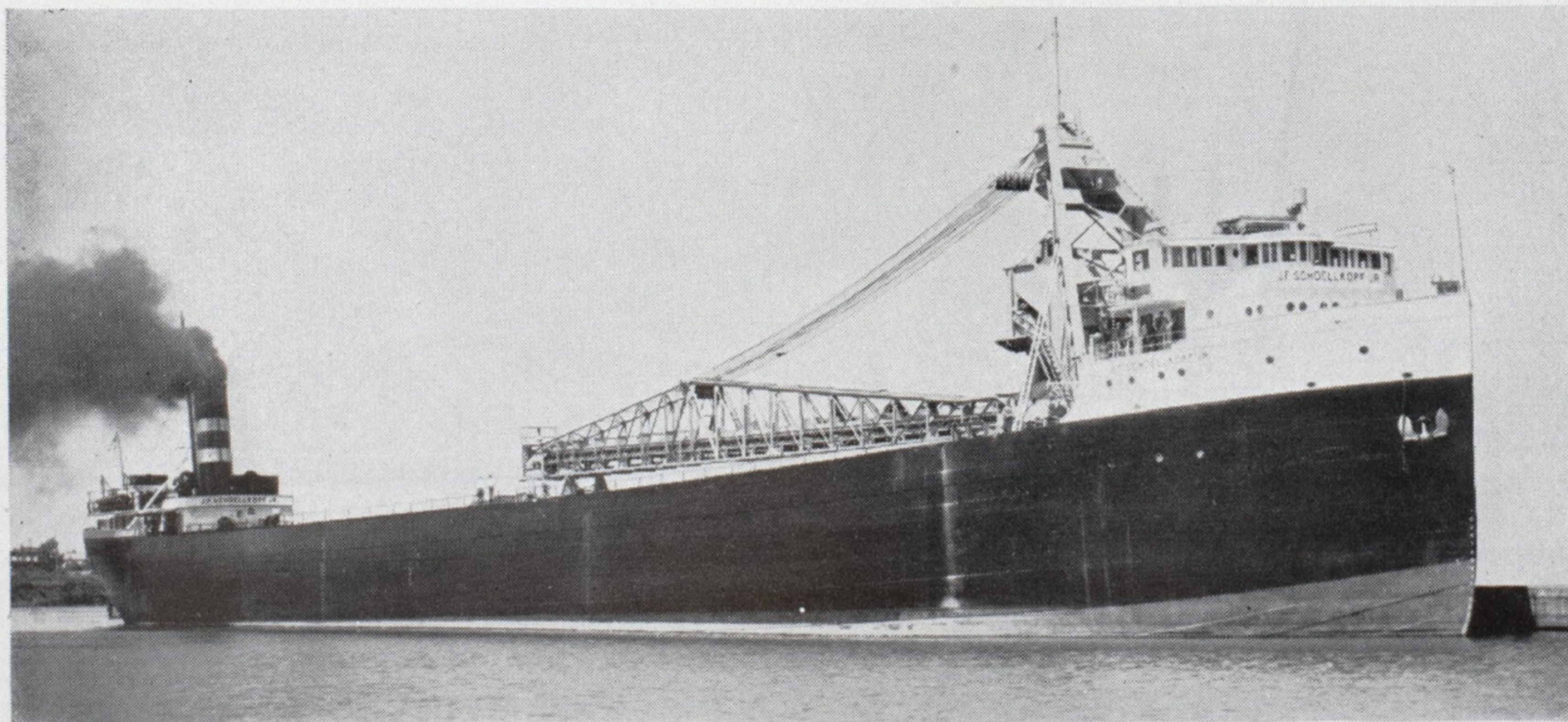
*The J. F. Schoellkopf Jr. deliverieing her maiden cargo as a self-unloader Aug. 31 at Milwaukee. Coal from Toledo*

Cleveland, for the conversion of a fourth vessel along similar lines. The vessel chosen was the J. F. SCHOELLKOPF JR., a typical lake bulk freighter, built by the American Ship Building Co., at Lorain, O., in 1907.

The conversion was carried out at the Lorain O., plant of the American Ship Building Co., and the SCHOELLKOPF sailed from the builder's yard on Aug. 27, a completed self-unloader, 12 weeks after work had begun. She proceeded to Toledo and took on 9400 tons of coal. Sailing from Toledo Aug. 28 she arrived at Milwaukee on Aug. 31. Discharge of the cargo at Milwaukee, which gave an opportunity for the first complete try-out of the unloading

equipment was accomplished in about 9 hours, which, everything considered, was a remarkably fine performance, though no attempt was made to reach the maximum rate of discharge.

The S. S. J. F. SCHOELLKOPF JR. was chosen from the fleet of the American Steamship Co. as the vessel best adapted for the purpose. Her principal dimensions are: Length overall, 552 feet; length between perpendiculars, 532 feet; breadth molded, 56 feet; depth molded, 31 feet. The original propelling machinery consisting of a three-cylinder triple-expansion engine of 23½ x 38 x 63 inches diameter and 42 inches stroke was not disturbed, neither was the boiler plant consisting



*J. F. Schoellkopf Jr. of the American Steamship Co. after conversion to a self-unloader at Lorain, O.*



of two coal-burning Scotch boilers, 15 feet long by 11 feet 6 inches in diameter, operating on saturated steam at 180 pounds pressure per square inch. Additional machinery needed for operating the self-unloading equipment will be referred to later.

### **Especially Suited for Conversion**

Possibilities of the *SCHOELLKOPF* for conversion to a self-unloader were at once apparent as she had a good depth and a liberal amount of sheer forward. The wisdom of the choice was later borne out by the fact that when fully loaded she rode in excellent trim. Had she been originally designed and built as a self-unloader a better distribution of weight would not have been possible.

Conversion to a self unloader was carried out on almost identical lines with the conversion of the three first vessels. Hoppers were constructed in the holds to serve two bulk conveyors symmetrically arranged fore and aft on each side of the centerline. These two fore and aft conveyors deliver to cross conveyors at the forward end which in turn dump the material on to an inclined conveyor which carries it to the deck, discharging to a boom conveyor. The boom, which is 180 feet in length, can be swung so as to deliver cargo on the dock abreast of the stem of the ship.

While the vessel was undergoing conversion, the owner's quarters were completely removed and renewed so that there are now three comfortable and attractive rooms, each fitted with its own private bath. Additional crew's accommodations were also provided and all the cabins of the ship were thoroughly reconditioned and refinished. As an aid in navigating and handling the vessel wings were built on the pilot house, as shown in the accompanying illustration, making an enclosed bridge from side to side.

As in the first three vessels special care was exercised to maintain the greatest possible cargo capacity while

at the same time insuring a proper flow of cargo to the hopper openings. In the midship area the loss of cargo space is only about 12 per cent and the overall loss in cubic capacity self-trimmed is only about 19 per cent.

Every precaution has been taken to avoid breakage of cargo while at the same time maintaining the efficiency of the equipment. A minimum clearance of 24 inches is maintained over the belts. Throughout the entire conveying system there are no serious drops to cause breakage.

Throat openings of the hoppers are 4 feet, 4 inches wide by 3 feet in a fore and aft direction. The hoppers are spaced at 6-foot centers and are served by hand operated gates. Because of the unique design of the gates, it is possible to space the hoppers more closely than customary in other vessels of this type. About two-thirds of the opening is closed by a sliding gate to which is attached a hinged plate which closes the remaining portion and also serves as an apron when the gate is open. Not only does the design of the gates increase capacity but it also tends to prevent breakage by "laying" the material on the belt. The gate operating mechanism is readily accessible and there is liberal head room at the hand wheels. Ample room is also provided in the tunnels.

### **Conveyor Belts in Hold**

The two hold belt conveyors are each 42 inches wide and are supported on 4-inch diameter troughing idlers spaced at 2 feet centers with return idlers at 9 feet centers. At the discharge end the belts rise on a radius of 300 feet to a point about 15 feet 6 inches above the tank top where they discharge onto cross conveyors and thence to the pan conveyor carrying the cargo up to a hopper delivering to the belt conveyor on the boom.

Each of the hold belts is driven by a 75 horsepower, 900 revolutions per minute, 440 volts, 3 phase, 60 cycle, slip ring induction motor. The belt

speed is 350 feet per minute.

The belts on the cross conveyors, transferring the material from the hold belts to the pan conveyor, are also 42 inches wide, double surfaced, and are driven by the head pulley of the hold conveyors through mitre gears with chain and sprocket reduction.

The pan conveyor which elevates the material to the deck and discharges on the boom conveyor is 96 inches wide and has a capacity of 1800 long tons of stone per hour. The inclination is 42 degrees and the total lift is about 48 feet. A 200-horsepower, 720 revolutions per minute, 440 volts, 3 phase, 60 cycle, slip ring induction motor with a solenoid operated brake drives the conveyor at a speed of 81 feet per minute. The drive is located at the head end and operates through a Robins-Falk herring bone reduction gear and Morse silent chain.

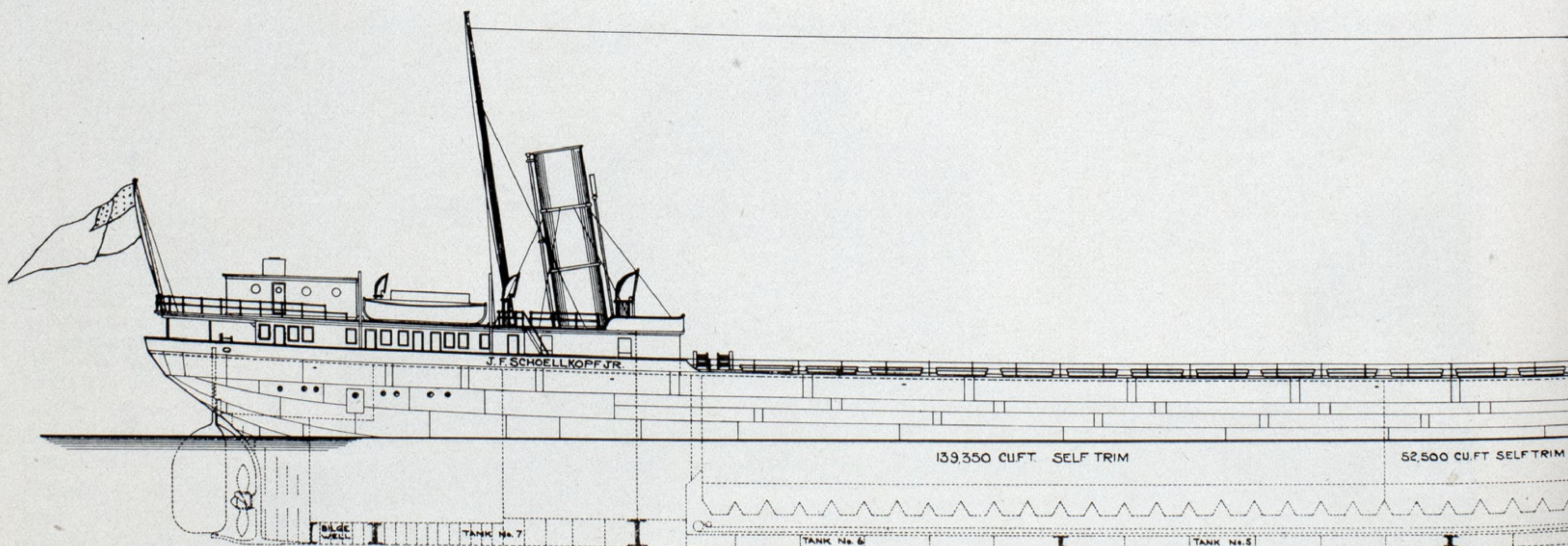
### **Boom Covers Wide Range**

From the pan conveyor the material passes through a cast steel chute to the boom conveyor which is 180 feet long, by 48 inches wide. The belt speed is 460 feet per minute. The boom is pivoted to the deck under the elevator discharge chute and may be swung over either side of the ship.

The boom drive is located at the lower end and consists of a 200-horsepower 720 revolutions per minute, 440 volts, 3 phase, 60 cycle, slip ring induction motor with a solenoid operated brake.

All of the conveying equipment, including belts and drives, was furnished by the Robins Conveying Belt Co. The electric motors were furnished by the Elliott Co.

The main control panel for the conveying machinery is located on the starboard side of the main deck forward and is enclosed by steel partitions. Control stations for the boom and pan conveyors are located on the spar deck port and starboard. The hold conveyor station is at the head



*General arrangement of the J. F. Schoellkopf Jr. after conversion from a bulk freighter to a self-unloading vessel.*



of the system and the operator stands in a dust-tight cab with two windows in the after wall through which he can watch the material coming off the cross conveyors to the pan conveyor.

From this point the operator has complete control and the hold conveyors may be stopped at any time by a pull cord running the entire length of the tunnel. Each conveyor is operated independently or in sequence, so that if any conveyor is stopped, the conveyors ahead continue and those behind stop. Adjacent to each of the three main control stations there is a push button actuating a flashing signal light in the tunnel. Thus by means of a code of signals the entire system is under the control of the chief operator.

To supply the electrical energy to operate the conveying machinery a new 500-kilowatt, 3600 revolutions per minute, 480 volts, 3 phase, 60 cycle, Elliott condensing turbine generator set is installed in the fan tail. This part of the ship thus becomes virtually an extension of the engine room as the bulkhead between has been removed. The turbine generator set has a direct connected exciter and is operated on saturated steam at 170 pounds pressure per square inch. An Elliott condenser of 750 square feet, surface type, operating at 26 inches vacuum receives the exhaust steam from the turbine generating set. Since the unloading machinery is rarely used when the ship is under way the original boiler capacity is found to be amply sufficient to operate the auxiliary machinery installed.

#### Ample Lighting Is Provided

The lighting load of the self-unloading vessel is several times that of the ordinary freighter. A double row of lights are fitted throughout the main operating tunnel, with single rows of lights outboard. In addition there are lights between hoppers and adequate lighting is also provided at the head end of the conveyor. Flood lights are

installed on the boom and "A" frame and additional deck lights have also been fitted. To take care of this extra lighting load a 50 kilowatt Elliott turbine generator of 125 volts, direct current, has been installed aft.

Two Morris 4-inch motor-driven dredge pumps, one forward and one aft, have been installed for draining the tunnels and the forward recess under the pan conveyor. The ballast piping was relocated outboard of the tunnel on the tank top.

#### Steam Winches for Boom

Three 8 x 10 inches American Ship Building Co. steam winches with Stephenson reverse gear have been installed for serving the boom. Two of these winches are used for swinging the boom and the third is used for the tag line. These winches are located on an extension of the forecastle deck and are fitted with centralized control for convenient operation. A Clyde, 10 x 12 inches, two drum steam winch has been installed in the same locality, to serve as a boom hoist.

The SCHOELLKOPF as a self-unloader has a rated unloading capacity of 1800 long tons per hour of stone weighing 90 pounds per cubic foot, or 1120 short tons of coal at 50 pounds per cubic foot. In operation the unloading equipment is capable of a 20 per cent overload.

As converted the SCHOELLKOPF has a self-trimmed hold capacity of 412,280 cubic feet and a deadweight capacity of 11,030 short tons on a draft of 20 feet.

The department of commerce reports an improvement in shipbuilding in Northern Ireland. Two new contracts were placed during the first quarter and two during the second quarter, so that there is approximately 36,000 tons under construction. The situation is far more encouraging than a year ago, when the yards in that district had no new work. Repairing and reconditioning of old ships is also improving.

## Load Carrying Capacity of Lubricants Tested

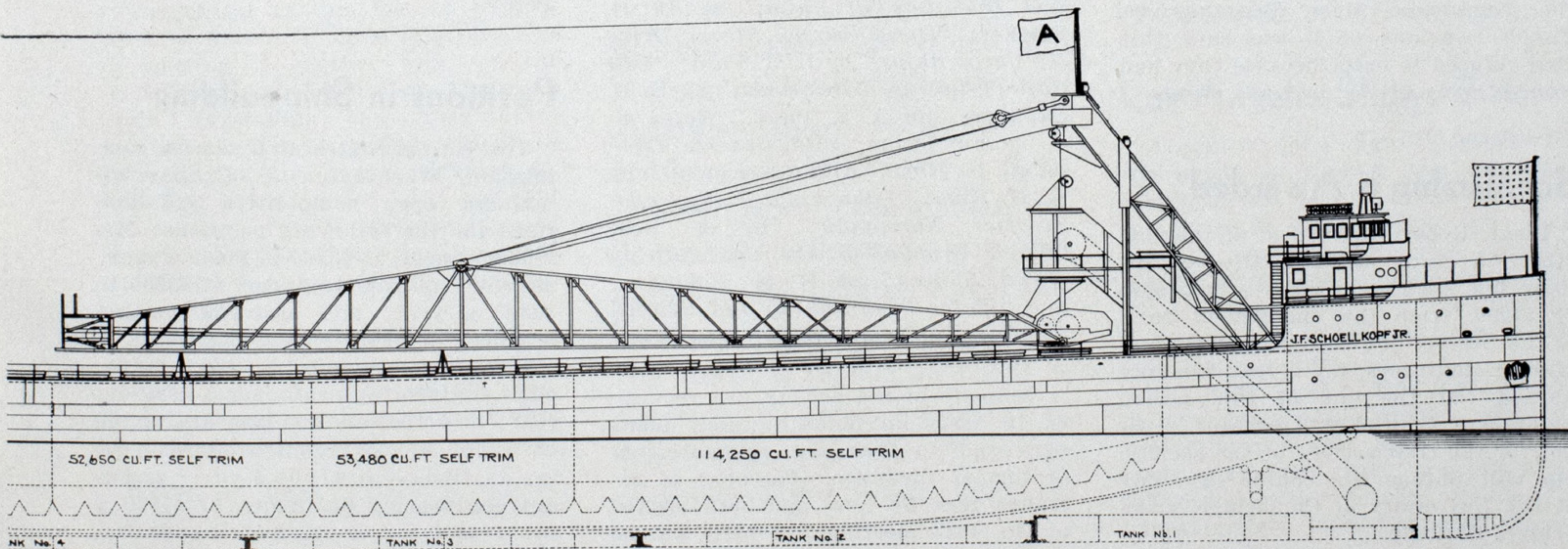
THE adequate determination of the load carrying capacity of lubricants is made possible by the recent development of a machine for this purpose by the Timken Roller Bearing Co., Canton, O. The machine consists of a cast iron base supporting a testing mandrel, a tank containing the lubricant, and a lever system for applying load or friction. Three General Electric cartridge type heating units keep the lubricant at any desired temperature up to 210 degrees Fahrenheit. The equipment is simple and the operator needs no special training or particular skill to obtain accurate results.

The machine answers a number of pertinent questions which heretofore have been difficult to solve. Load carrying capacity or film strength of lubricants, particularly those beyond the range of viscous lubrication, can be determined. Tests can be made to show accurately comparative load carrying capacity of lubricants at constant rubbing speed and the maximum load a lubricant will stand before the film breaks down. Furthermore, these tests can be made with reference to any typical operating condition such as load, speed, or temperature.

Although primarily designed for checking the load carrying capacity and friction of lubricants, the machine has been modified to check the wear developed by any abrasiveness in the lubricant under investigation.

Certain types of compounded lubricants have been found to be quite abrasive and the amount of wear taking place during a test can be easily checked by weighing the specimen before and after the test to determine the amount of material that has been removed.

Determination of friction depends on load, rubbing speed, materials in contact, temperature and the lubricant.



The work was done in a period of 12 weeks by the American Ship Building Co. at its Lorain, O. yard



## Lifeboat Race Is Won by American Crew

For the first time an American crew won the annual international lifeboat race, held in New York harbor on Labor Day, Sept. 4. Eight sailors of the tanker W. C. TEAGLE of the Standard Shipping Co. turned the trick by winning the seventh annual international lifeboat race for the United States in that day. The entry from the North German Lloyd liner GENERAL VON STEUBEN crossed the line for second place.

Americans from the American Export liner EXCALIBUR, won third place, and fourth place went to the Danes from the Isbrandtsen-Moller vessel ANNA MAERSK. Fifth place was won by the American liner PETEN of the United Fruit Co., and sixth place by the German liner NEW YORK, of the Hamburg American Line.

### Rough Sea, Against Tide

The race, which was held in the narrows off Bay Ridge, Brooklyn, over a two-mile course, was completed by the winning crew in 24 minutes and 16 seconds. Last year the winning lifeboat crew of the Norwegian-American liner BERGENSFJORD covered the same course in 17 minutes and 27 seconds, but did not have the same conditions to contend with, as the ebb tide was strong and the race had to be rowed up the bay against a three mile current, in a choppy sea and a drenching rain. In the winning crew of the lifeboat of the W. C. TEAGLE, were Adolf Larsen, coxswain; C. C. Taylor, H. L. Nurge, C. Nystrup, A. Zahniser, C. J. Borman, H. Fudski, C. A. Rucker, and George Gerdes.

Capt. J. F. Milliken presided at the presentation of the medals and his daughter, Miss Jane Milliken, handed the victorious crew their award. Previous lifeboat races have been won as follows: in 1927, the Norwegian liner SEGUNDO; in 1928, the British MAURETANIA; in 1929, the Norwegian SUD AMERICANO; in 1930, the Norwegian STAVANGERFJORD; and in 1931 and 1932 the Norwegian liner BERGENSFJORD. The Norwegians, so it was said, this year refused to enter because they had won so many of the previous events.

## Scholarship Is Awarded

Lieut. Robert D. Conrad of the construction corps of the United States navy has been awarded a scholarship of \$1000, from the endowment fund of the Society of Naval Architects and Marine Engineers, for a year of study abroad. At the end of this period Lieutenant Conrad will present a paper for the transactions of the society. He will pursue his course of study at the University of Cambridge, Cambridge, England.

He is a native of Massachusetts and

entered the United States Naval academy from that state July 2, 1923. He graduated in 1927, standing tenth in his class, after which he spent two years at sea. He was appointed to the construction corps in June, 1930 and entered the Massachusetts Institute of Technology where he graduated in June, 1932 with high honors and the degree of master of science.

Lieutenant Conrad was highly recommended for the scholarship by Prof. James R. Jack of the Massachusetts Institute of Technology, and by Commander H. E. Rossell, CC., U.S.N., who succeeded Prof. William Hovgaard as head of the course of naval construction at the Institute.

Rear Admiral Land, chief constructor of the navy, on being advised by H. Gerrish Smith, secretary-treasurer of the society of the award of the scholarship, replied, "May I convey to you my sincerest appreciation and to the Society of Naval Architects and Marine Engineers in the award of the scholarship to a member of the construction corps of the United States navy."

## Naval Architects Meeting

The forty-first annual meeting of the Society of Naval Architects and Marine Engineers will be held at 29 West Thirty-ninth street, New York City, Nov. 16 and 17, and will close with a banquet on Friday evening, Nov. 17.

### Papers To be Presented

The following papers are to be presented: "*Theory of Elasticity, Solution of Problems by Trial*," by L. W. Ferris; "*Some Notes on Defects and Fractures*," by William Bennett; "*Fire Control on Passenger Vessels*," by George G. Sharp; "*Effect of Form on Roll*," by M. E. Serat; "*A Method of Estimating Ship Frictional Coefficients*," by D. W. Taylor; "*Terminal Operation with Reference to Design and Operation of Ships*," by H. E. Stocker; "*Diesel versus Steam Drive for Cargo Ships*," by L. R. Ford; "*Full Scale Trials on a Destroyer*," by H. E. Saunders and A. S. Pitre; "*Notes on S. S. Manhattan, with General Comment on North Atlantic Liners*," by E. H. Rigg; "*Launching of Passenger Steamer Normandie*," by A. See; "*Water Circulation and Gas Path in Naval Boilers*," by S. M. Robinson; and "*Water Conditioning and Related Problems of Marine Boiler Operation*," by A. C. Purdy.

Members of the society are requested to assist in obtaining new members and to seek the reinstatement of former members. Payment of entrance fees by new members elected at the 1933 meeting has been waived by the executive committee.

## Grace Line Appointments, Passenger Department

Through Daulton Mann, executive vice president, the Grace line has announced the following changes in the executive direction of its passenger department.

Roy V. Crowder, for the past two and a half years passenger traffic manager of the Grace line in New York, is to fill the same position for the Grace line at its Pacific coast headquarters, 2 Pine street, San Francisco.

William B. Wheeler, effective Oct. 1, will serve as passenger traffic manager of the Grace Line, New York.

W. A. Young Jr., general passenger traffic manager, who has heretofore made his headquarters at San Francisco, will assume the duties of the same office for the Grace line on his arrival in New York from San Francisco on Oct. 2.

Mr. Crowder, one of the best known passenger executives in this country, has had a wide experience in passenger service during the thirty years of his working career. For eleven years he was passenger manager of the Los Angeles Steamship Co., and prior to that, he was general passenger agent for the Toyo Kisen Kaisha. He has also served with various railroads in every capacity from student agent to general agent.

Mr. Wheeler's entire career has been spent in the transportation business, and he has been assistant passenger traffic manager of the Grace line since 1930. Now one of the most popular transportation men in the country, he started his service as office boy with the Chicago, Milwaukee & St. Paul railroad in Buffalo. Following this he worked in the passenger department of various railroads and finally as general agent of the passenger department of the Lehigh Valley railway in charge of its entire western territory. In 1914 he joined the United Fruit Co. as city passenger agent and when he severed his connection with this company in 1930 he had been the United Fruit Co.'s passenger traffic manager for six years.

## Positions in Shipbuilding

The United States civil service commission, Washington, D. C., has announced open competitive examinations for the following positions: Marine engineer, at \$3800 to \$4600 a year; associate marine engineer, at \$3200 to \$3800 a year; and assistant marine engineer at \$2600 to \$3200 a year.

Examinations will also be held for chief engineering draftsmen at \$2600 a year; principal engineering draftsmen at \$2300 a year; senior engineering draftsmen at \$1800 a year; assistant engineering draftsmen at \$1620 a year; and junior engineering draftsmen at \$1440 a year.



# Imperial Preference Diverts Cargoes

## from American Vessels on Great Lakes

**L**OSS of employment to American vessels on the Great Lakes in carrying Canadian grain, due to the fairly recent consummation of two projects initiated by Canada—the opening, in 1931, of the new Welland ship canal between Lake Erie and Lake Ontario and the allowance of 6 cents per bushel preference on Canadian wheat shipped in British bottoms, effective Nov. 15, 1932—is strikingly illustrated in the following figures on grain shipments from the upper lakes.

Let us first consider the year 1929: From the opening of navigation that year to July 31, which is considered the end of the crop year, 348 cargoes of grain totaling 69,019,142 bushels were carried in Canadian ships; and 123 cargoes of grain totaling 34,525,607 bushels were carried in American ships.

Now let us compare this with the corresponding period of the present season of 1933. During this period 499 cargoes of grain totaling 73,259,061 bushels were carried in Canadian ships and 32 cargoes of grain totaling 8,282,901 bushels were carried in American ships. In other words, with a total movement in 1933 up to July 31, not including three small cargoes in foreign ships, of only 81,541,962 bushels, as compared with a total of 103,544,749 bushels for the same period in 1929, not including the insignificant amount moved in foreign ships, Canadian ships carried 4,239,919 bushels more in 1933 than they did in the same period during the boom year 1929; while American ships carried less than one-quarter of the amount they did in 1929.

### Effect of Imperial Preference

The extent of this loss of employment to American ships is made clear by putting it another way. Of the total lake movement of Canadian grain (excluding the insignificant amount carried in foreign ships) in 1929, during the period referred to, American ships carried 33.34 per cent or one-third, while in the same period in 1933 only 10.16 per cent or about one-tenth was carried in American ships.

American interests at the port of Buffalo have also suffered a serious set-back by the opening of the Welland canal and the imperial preference of 6 cents per bushel. In the year

Where the word "grain" is used in this article, it includes wheat, oats, barley, flaxseed and rye; but it does not include brley malt, mixed feed oats, groats, or screenings.

1929, from opening of navigation to July 31, Canadian wheat to Buffalo, delivered by vessels of both nations, amounted to 46,338,542 bushels. In the year 1933, for the same period, only 13,515,692 bushels of Canadian wheat were delivered by vessels of both nations at the port of Buffalo. Not a single bushel of this grain was intended for shipment to the United Kingdom. Whatever amount of it that was intended for export, via Barge canal and railroad, went to continental Europe or other parts of the world. The double effect of the new Welland ship canal and the 6-cent preferential adopted at the Ottawa conference, therefore, seems likely to destroy the importance of Buffalo as a grain port.

Nothing, of course, can be done about the Welland ship canal. That is now an established feature of navigation in line with inevitable progress.

◆ ◆ ◆

**A**T the Ottawa conference it was decided to favor British shipping by allowing a 6-cent preferential per bushel on wheat from Canada to the United Kingdom if shipped in British bottoms. American vessel owners at once recognized the effect that this would naturally have in diverting cargoes from their ships. Sufficient time has now passed to make possible an accurate statement on the extent to which this preference has actually affected American ships. The loss of employment to American ships is even more severe than anticipated. Furthermore, the port of Buffalo has suffered a real set-back as a grain exporting center. The purpose of this article is to point out by actual figures what this action means to American shipping on the Great Lakes.

◆ ◆ ◆

Something, however, might be done about the imperial preference by negotiation and failing results in this way by the adoption of retaliatory action on the part of the United States. Just what such action could be as confined to the Great Lakes is not clear.

### American Vessels as Standby

Orders in council by the Canadian parliament, issued from time to time when necessary, have at such times had the effect of rescinding the Canadian coastwise laws insofar as these affected the use of American flag ships in carrying cargo between Canadian ports. This, of course, is done only in an emergency and is done for the benefit of Canadian shippers, but incidentally it also gives some American vessels welcome employment. The effect, however, of the imperial preference is much more severe than any strict undeviating adherence to the Canadian coastwise laws as it very definitely has affected employment of American vessels in this traffic, not only between Canadian ports but also between Canadian and American ports as illustrated in the case of Buffalo.

Canadian farmers and shippers naturally, receiving a premium of 6 cents a bushel, are in good mood to take a chance on, (1) possibility of the stiffening of rates and (2) the chance of some delay in shipment. The fairly considerable use of American ships in the Canadian grain movement in the past has been mainly a matter of convenience to Canada; and this is not sacrificed because under present conditions, American vessels, having nothing else to do, can be called upon if necessary to ease the situation both as to rates and the capacity of the Canadian fleet to do the job within the limited time.

### Los Angeles Shows Gain

A gain of more than \$15,000,000 for the month of August over the same month of last year is shown for water commerce at Los Angeles. The total for the month aggregated approximately \$72,000,000 compared with \$56,382,000 in August, 1932. Volume also increased 140,000 tons, mainly in general merchandise.

The major part of this increase was in intercoastal trade which greatly improved over a year ago. Intercoastal trade accounted for approximately \$13,000,000 of the increase and also for approximately 100,000 tons of the increased volume.



# Late Decisions in Maritime Law

## Legal Tips for Shipowners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

**S**EAWORTHINESS is a relative term, the requirements of which vary with the nature of the cargo, and it must be determined by the facts and circumstances of each particular case. In the case of *SMYRNA*, 62 F. (2d) 1048, the court declared that the provision of the charter party involved that the vessel "shall be tight, staunch, strong, and in every way fitted for" the intended voyage, did not extend or qualify the obligation existing under the implied warranty of seaworthiness.

\* \* \*

**T**HE rule that when one vessel is grossly at fault the other's navigation must be viewed with leniency, will not excuse a plain fault.—*SAN SIMEON*, 63 F. (92d) 798.

\* \* \*

**T**HE fact that a lighter's captain was not on board when it was towed to another pier did not render the tug owner liable for damage to the lighter not contributed to or caused by the captain's absence, the charter not prohibiting towage in the absence of the captain.—*CONWAY NO. 23*, 64 F. (2d) 121.

\* \* \*

**C**ONTRIBUTORY negligence of a deckhand who was crushed between a tug and a barge did not bar recovery from the tug owner for his death, but merely required that the damages found by the jury be diminished in proportion to the amount of negligence attributable to such employee.—*Southern Railway Co. v. Colonna*, 64 F. (2d) 237.

\* \* \*

Mere watchman has no lien upon a vessel in its home port.—*Jenkins v. Rancocas Construction Co.*, 61 F. (2d) 96.

\* \* \*

**R**EFERENCE to a charter party in a bill of lading only incorporates that part of the charter not specifically covered by the bill of lading.—*ROBIN GRAY*, 65 F. (2d) 376.

\* \* \*

**S**O LONG as a steamship was able to combat whatever adverse weather conditions she encountered with all her ability unimpaired, she was not off hire under a breakdown clause in a government form time charter; and though by reason of damage to her rudder stock she was so impaired that she had only about half

the normal capacity of her rudder, she was not off hire where at the time she was on voyage, but was locked in ice.—*TERNE*, 64 F. (2d) 502.

\* \* \*

**O**NE who furnishes supplies to a vessel upon the order of the owner thereof is not required to examine the ship's papers or to make inquiry as to the authority of the owner to bind the vessel; such authority is given him by statute as well as by virtue of his title. One who furnishes supplies, etc., to the owner of a vessel is chargeable with notice of a valid preferred mortgage thereon.—*BERGEN*, 64 F. (2d) 877.

\* \* \*

**A**TUG is not the insurer of the safety of a vessel in tow. An action against a towing tug is one in tort and not for breach of contract. The burden is upon the tow to prove the negligence of the tug. In the absence of such proof, a tow which collides with an anchored vessel is blameworthy.—*WILLOWPOOL*, 65 F. (2d) 385.

\* \* \*

**I**T WAS the duty of a ship furnishing winches and falls for the use of a stevedore and its employees to furnish such as were suitable for the work and free from defects. This required the providing of a fall that was in reasonably good condition and the providing of a place in which it was reasonably safe to work.—*DeLuca v. Shepard Steamship Co.*, 65 F. (2d) 566.

\* \* \*

**W**HERE a third person took charge of a barge at the charterer's request, the charterer was only secondarily liable for negligent overloading of the barge by such third person, and the third person was primarily liable.—*MILLWOOD*, 3 F. Supp. 156.

\* \* \*

**D**EFENSE of inevitable accident in the technical admiralty sense rests heavily upon the vessel asserting it, it was declared in the case of *BARBARA RUXTON*, 3 F. Supp. 169. This defense, it was brought out, sometimes is established by showing what was the real cause of the accident and further showing that such cause became efficient without any negligence on the part of the ship. The defense has, in some cases, been held to be established, even when the real cause is not definitely ascertained. In all such cases, however, all possible causes have been

exhaustively covered, and it has been shown, as to each and all of them, that the proper exercise of care by owner, master, officers, and crew would not have avoided them.

\* \* \*

**W**HERE a tow, driven by the wind, swung out of its course and collided with a barge in tow of a tug, it was the duty of the tug, said the court in the case of *ELIZABETH M. MILLER*, 3 F. Supp. 171, to use every reasonable effort to prevent a collision. The evidence in this case showed that the tug used every such effort to prevent the collision.

\* \* \*

**O**BLIGATION of a shipowner is only to provide a reasonably safe place for seamen to work in order to make the ship seaworthy in this respect. The shipowner is not an insurer of the safety of the premises. . . Ordinarily on shipboard a member of the crew is entitled to medical treatment and maintenance and wages on the boat at least until she reaches port, and maintenance and cure thereafter until he is cured, or until he is cured so far as possible. . . Maintenance and cure should be given liberally to the end that during the period of his disability the injured employee is not only maintained but that he is cured as far as possible.—*Kahyis v. Arundel Corp.*, 3 F. Supp. 492.

\* \* \*

**W**HERE the federal fire statute was incorporated in a charter party, the burden was on the cargo owner to show that fire damaging the cargo was caused by design or neglect of the owner's agent; knowledge of such agent that oxyacetylene torches would be used in work on the ship did not charge such agent with neglect under the statute so as to make the owner liable for damage to the cargo caused by sparks.—*OLDER*, 65 F. (2d) 359.

\* \* \*

**M**ASTER'S on-board bills of lading acknowledging receipt of lumber presumptively established that the vessel received the lumber. Such bills of lading are binding on the vessel when the lumber came within the master's custody, and hence claimant of vessel libeled for not delivering lumber had the duty of establishing that the lumber had not come alongside.—*ROBIN GRAY*, 65 F. (2d) 375.



# Marine Business Statistics Condensed

## Record of Traffic at Principal American Ports for Past Year

### New York

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	277	1,656,291	280	1,676,614
July .....	270	1,477,769	256	1,397,794
June .....	249	1,482,801	264	1,580,337
May .....	255	1,573,337	244	1,513,231
April .....	232	1,330,774	232	1,311,863
March .....	243	1,466,812	264	1,536,778
February .....	237	1,373,856	236	1,380,867
January .....	254	1,416,857	245	1,383,630
<b>December .....</b>	<b>244</b>	<b>1,307,332</b>	<b>253</b>	<b>1,387,341</b>
November, 1932.....	227	1,154,961	232	1,175,988

### Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)  
(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	61	181,283	61	178,894
July .....	69	203,042	53	151,781
June .....	51	152,234	54	149,616
May .....	58	157,704	49	141,334
April .....	63	193,946	41	131,990
March .....	60	192,817	43	141,445
February .....	38	105,262	20	56,395
January .....	53	154,823	41	142,216
<b>December .....</b>	<b>44</b>	<b>141,426</b>	<b>37</b>	<b>116,120</b>
November, 1932.....	54	154,796	41	130,250

### Boston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	129	453,348	101	329,686
July .....	124	410,500	96	379,721
June .....	118	378,179	93	303,239
May .....	111	295,854	83	254,667
April .....	86	271,864	69	226,862
March .....	85	259,203	65	240,768
February .....	83	285,162	53	191,084
January .....	97	329,575	56	211,428
<b>December .....</b>	<b>98</b>	<b>300,132</b>	<b>64</b>	<b>241,693</b>
November, 1932.....	88	308,164	59	220,530

### Portland, Me.

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1933.....	11	24,324	9	23,063
June .....	11	24,615	12	26,271
May .....	13	19,020	13	23,395
April .....	5	9,254	5	7,387
March .....	9	24,186	10	23,989
February .....	19	52,001	19	48,913
January .....	14	35,038	13	34,153
<b>December .....</b>	<b>17</b>	<b>43,705</b>	<b>16</b>	<b>40,396</b>
November .....	7	9,785	6	10,174
October, 1932.....	8	21,407	7	18,228

### Providence

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	6	11,862	4	10,186
July .....	3	6,171	2	9,465
June .....	6	16,192	2	4,437
May .....	3	10,490	3	3,834
April .....	8	30,156	2	5,650
March .....	4	17,052	.....	.....
February .....	7	27,520	1	4,393
January .....	2	7,473	1	3,171
<b>December .....</b>	<b>3</b>	<b>7,918</b>	<b>2</b>	<b>8,820</b>
November, 1932.....	4	13,673	3	11,066

### Portland, Oreg.

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	22	83,506	34	129,908
July .....	26	99,339	29	111,559
June .....	20	78,651	34	120,089
May .....	25	98,688	28	105,115
April .....	17	67,220	24	97,104
March .....	20	79,537	43	162,970
February .....	25	97,554	34	130,014
January .....	24	95,271	33	138,372
<b>December .....</b>	<b>22</b>	<b>92,267</b>	<b>41</b>	<b>166,858</b>
November .....	19	78,628	41	157,544
October, 1932.....	25	98,792	46	182,167

### Baltimore

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	95	299,114	98	307,841
July .....	91	272,589	90	282,788
June .....	65	205,724	71	240,487
May .....	79	237,046	78	229,333
April .....	63	198,940	58	178,957
March .....	72	228,806	72	223,594
February .....	63	195,299	75	226,672
January .....	77	247,903	78	252,052
<b>December .....</b>	<b>75</b>	<b>238,598</b>	<b>68</b>	<b>224,544</b>
November .....	80	254,047	83	262,796
October, 1932.....	98	281,907	94	281,534

### Norfolk and Newport News

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	8	16,472	34	68,011
July .....	16	32,370	34	71,798
June .....	16	30,163	31	60,544
May .....	18	33,521	32	68,941
April .....	14	39,010	36	100,485
March .....	18	56,097	42	111,038
February .....	16	49,213	36	82,544
January .....	20	58,470	33	76,493
<b>December .....</b>	<b>28</b>	<b>77,286</b>	<b>38</b>	<b>92,621</b>
November, 1932.....	20	54,678	35	79,516

### Jacksonville

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	7	12,477	7	13,152
July .....	13	22,553	11	25,670
June .....	9	22,192	6	12,222
May .....	5	13,102	9	16,275
April .....	3	8,297	8	20,260
March .....	7	18,536	9	18,137
February .....	6	15,126	7	13,454
January .....	3	4,683	8	21,018
<b>December .....</b>	<b>10</b>	<b>24,067</b>	<b>10</b>	<b>24,595</b>
November, 1932.....	10	24,352	2	1,799

### Key West

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	18	33,210	18	32,716
July .....	24	39,400	22	37,180
June .....	27	40,569	27	42,160
May .....	41	55,097	39	59,075
April .....	41	50,121	35	47,458
March .....	42	57,720	39	54,508
February .....	37	52,615	34	49,320
January .....	38	55,322	38	54,692
<b>December .....</b>	<b>38</b>	<b>59,058</b>	<b>39</b>	<b>58,604</b>
November, 1932.....	37	64,384	37	61,961

### Mobile

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	100	223,940	102	203,716
July .....	110	221,610	114	236,622
June .....	97	206,147	91	183,736
May .....	95	210,743	105	231,000
April .....	105	209,469	109	235,429
March .....	96	234,328	91	206,064
February .....	80	184,669	83	200,850
January .....	100	232,451	91	201,671
<b>December .....</b>	<b>86</b>	<b>204,295</b>	<b>92</b>	<b>209,061</b>
November, 1932.....	94	210,195	97	234,590

### Seattle

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	183	604,618	161	573,703
July .....	166	545,372	169	554,228
June .....	36	160,127	36	157,887
May .....	37	149,245	38	164,025
April .....	41	188,899	40	180,517
March .....	47	194,485	51	216,803
February .....	43	196,979	43	190,338
January .....	50	212,954	49	210,083
<b>December .....</b>	<b>45</b>	<b>202,731</b>	<b>47</b>	<b>207,521</b>
November, 1932.....	43	193,530	45	200,513

### New Orleans

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	144	420,570	151	429,183
July .....	169	468,111	184	493,775
June .....	147	422,280	146	422,235
May .....	150	444,982	151	434,952
April .....	142	409,411	154	416,833
March .....	161	464,728	161	457,880
February .....	128	378,040	127	366,948
January .....	135	307,750	145	410,412
<b>December .....</b>	<b>151</b>	<b>434,935</b>	<b>157</b>	<b>450,545</b>
November .....	146	442,427	156	457,621
October, 1932.....	140	403,062	150	424,621

### Charleston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	33	92,987	27	76,881
July .....	35	102,115	29	82,742
June .....	32	84,362	28	75,023
May .....	21	53,125	20	49,888
April .....	19	49,280	20	52,449
March .....	35	99,612	29	83,243
February .....	24	65,228	24	65,218
January .....	28	83,545	23	65,063
<b>December .....</b>	<b>24</b>	<b>58,943</b>	<b>24</b>	<b>63,086</b>
November, 1932.....	33	93,457	30	85,072

### Galveston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	19	44,012	69	205,442
July .....	22	33,718	77	213,821
June .....	27	56,231	79	227,842
May .....	27	58,632	86	261,124
April .....	27	64,360	73	215,020
March .....	19	34,677	83	239,683
February .....	17	29,935	69	200,485
January .....	23	43,723	79	235,748
<b>December .....</b>	<b>24</b>	<b>39,491</b>	<b>103</b>	<b>311,999</b>
November .....	29	64,016	102	314,452
October, 1932.....	26	54,231	94	277,977

### Los Angeles

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	156	578,255	156	605,610
July .....	165	641,116	152	601,731
June .....	189	670,782	171	671,704
May .....	190	600,184	185	630,905
April .....	178	625,508	190	614,741
March .....	152	550,205	167	599,191
February .....	143	528,613	155	543,628
January .....	162	633,944	169	668,576
<b>December .....</b>	<b>152</b>	<b>538,392</b>	<b>156</b>	<b>560,901</b>
November, 1932.....	194	645,826	195	662,569

### San Francisco

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1933.....	174	748,739	170	743,918
July .....	156	710,857	154	717,664



# Latest Data on New Marine Work

Information on New Ships Ordered—Building and Repair Contracts Let—Shipping Board Loans Made, Authorized or Pending

**F**ROM department of commerce reports, on Aug. 1 American shipyards were building or had under contract to build for private shipowners 64 vessels aggregating 37,856 gross tons, compared with 60 vessels aggregating 34,846 gross tons on July 1. This does not include vessels after they are launched.

Of this new work two are steel ocean going vessels, steam propelled, of a combined gross tonnage of 9600. There were 61 steel hull unriggered vessels of 100 gross tons and over totaling 27,656 gross tons; and one unriggered wooden hull vessel of 600 gross tons.

New contracts placed during the month of July included five steel river barges each of 815 gross tons for the American Barge Line Co.; three steel river barges of 475 gross tons each for the Constanzo Transportation Co.; and five steel river barges each of 350 gross tons for the McCrady Rodgers Co., all awarded to the American Bridge Co., Pittsburgh. The Dravo Contracting Co., Pittsburgh, undertook construction of four steel river barges each of 700 gross tons, for stock. The Ingalls Iron Works, Birmingham, Ala., received a contract from the Southern Sand & Gravel Co. of two steel river barges of 160 gross tons. The Jones & Laughlin Steel Corp., Pittsburgh, was awarded a contract for one steel river barge of 160 gross tons for the Ohio River Co. McClintic-Marshall Corp., Bethlehem, Pa., received an order from the Texas Co. for two steel harbor barges each of 250 gross tons; also an order from the Union Sand & Gravel Co. for six steel river barges each of 540 gross tons. The United Dry Docks Inc., New York, received an order from McWilliams Blue Line for two steel coastwise barges of 800 gross tons each. The Western Boat Building Co., Tacoma, Wash., received an order for a diesel driven wooden vessel of 113 gross tons.

## U. S. Engineers Ask Bids

Bids will be received Oct. 10 by the United States engineer office, Rock Island, Ill., for excavating a channel in the Mississippi river in the general vicinity of Horse Island and Linwood, Iowa.

The work to be done will consist of furnishing all plant, labor and supplies for excavating and disposing of all material in the river bed between

mile 367 and mile 370 below St. Paul, and as indicated on drawings, so as to secure a minimum depth of 11 feet below the proposed upper pool level of dam No. 16, Mississippi river.

The United States engineer office, Louisville, Ky., will receive bids at 2 p. m., Oct. 10, for removing approximately 21,500 cubic yards of ledge rock below the locks at dam No. 41, Ohio river, as a part of the public works program. Further information on application.

The United States engineer office, Montgomery, Ala., will open bids Oct. 11 for dredging a channel for new entrance to St. Andrews Bay, Fla., through the peninsula lying across the mouth of the bay. Approximately 2,521,700 cubic yards of material will be removed.

The United States engineer office, New Orleans, will open bids Oct. 5 for constructing about 1770 linear feet of creosoted timber bulkheads in the Louisiana and Texas intracoastal waterway near Houma, La.

## Fast Japanese Motorship

One of Japan's latest and finest cargo ships and one of the speediest, if not the speediest, freighters of the world, the motorship AZUMASAN MARU, was scheduled to arrive in New York on her maiden voyage Sept. 23. The new freighter, which has a speed of 18½ knots and space for 9000 tons of cargo, is the latest addition to the Mitsui line and is said to be the last word in motorship construction.

The AZUMASAN MARU is to operate regularly between New York, other Atlantic ports and Japan.

## Bids in for Cargo Ship

In the September MARINE REVIEW, it was reported that bids would be opened Aug. 31 for a 7450 ton deadweight cargo and passenger steamer for the Gulf Pacific Mail Line Ltd. (Swayne & Hoyt Ltd.), San Francisco.

Bids were received as scheduled but no word has been received as to what action has been taken in awarding contract.

The lowest bid received was \$900,000 from Gulf Industries Inc., Pensacola, Fla. The next lowest bids were: Moore Dry Dock Co., Oakland, Calif., \$1,244,946; Sun Shipbuilding & Dry Dock Co., Chester, Pa., \$1,398,000; Gen-

eral Engineering & Dry Dock Co., Oakland, Calif., \$1,402,612.

Bids, higher than these, were also submitted by the Los Angeles Shipbuilding Co., San Pedro, Calif.; Federal Shipbuilding & Dry Dock Co., Kearney, N. J., and Bethlehem.

## Radio Direction Finders

The entire fleet of the Black Diamond Steamship Corp. is being equipped with Kolster radio direction finders provided and installed by the Mackay Radio & Telegraph Co. Installations are being made on the following ships: BLACK EAGLE, BLACK FALCON, BLACK GULL, BLACK HAWK, BLACK HERON, BLACK TERN, WEST ARROW, and WEST ELDARA. These vessels operate between Boston, New York, Philadelphia, Baltimore and Hampton Roads, and Antwerp, Rotterdam and Amsterdam.

Mackay Radio also, through its coastal stations at Sayville, L. I., Rockland, Me., West Palm Beach, Fla., and New York City, provides the radio service for the Black Diamond ships and operates the equipment aboard the vessels.

## S. S. President Wilson

Bids were received about the middle of September for repairing the Dollar liner PRESIDENT WILSON, damaged in a collision with the freighter COLDWATER on Sept. 1, off the Carolina coast.

The Newport News Shipbuilding & Dry Dock Co. was the low bidder having quoted a figure of about \$100,000. The vessel received extensive damage to her bow, both above and below the waterline. Work will be completed by Oct. 7.

## Repairs to S. S. Aleutian

No time was lost in placing the contract for repairs to the passenger liner ALEUTIAN of the Alaska Steamship Co., damaged when she grounded near Vancouver Islands, Aug. 27. The contract for repairing the ALEUTIAN was awarded on Sept. 2 to the Todd Dry Docks Inc., Seattle. It involves an expenditure of between \$60,000 and \$70,000. The work is to be completed in 26 days or just before Oct. 1. About 20 hull plates had to be renewed.



## New Shipbuilding Program For U. S. Coast Guard

The federal emergency administration of public works has made an allotment of funds for the United States coast guard. Included are three approved projects for the construction of vessels. These vessels will be of steel construction with tentative general characteristics about as indicated below:

(a.) Three cruising cutters; 300 feet long; 48 feet beam; 29 feet deep; 2000 tons; single screw, geared turbines, 6500 shaft horsepower. Delivery in about 12 months, or as soon as possible.

(b.) Three cruising cutters; 165 feet long; 36 feet beam; 21 feet deep; 1000 tons; single screw, geared turbines, 1500 shaft horsepower. Delivery in about 12 months, or as soon as possible.

(c.) Four harbor craft; 110 feet long; 24 feet beam; 13 feet deep; 300 tons; single screw, diesel electric drive; two generators; 800 shaft horsepower. Delivery in about 10 months, or as soon as possible.

The plans and specifications for the three 165-foot cutters referred to in item (b) above are similar to the cutter ESCANABA, fully described in the January, 1933, issue of MARINE REVIEW, completed last fall for service on Lake Michigan. These plans have been completed and have been forwarded to prospective bidders. For the time being, they will be known as cruising cutters Nos. 56, 57 and 58. Bids will be opened at 2 p. m., Oct. 9, 1933. The vessels must be completed and delivered in 365 calendar days after date of official notice to proceed with the work. They are to be of steel construction and the definite dimensions are: Length overall, 165 feet; beam molded, 36 feet; depth molded to upper deck at side amidships, 21 feet; draft maximum, 13 feet; displacement, at about 12 feet mean draft, 1000 tons; geared turbine drive, single screw, estimated shaft horsepower, 1500.

The companies who have been asked to bid on the three 165-foot cutters are: Bath Iron Works Corp., Bath,

Me.; Consolidated Shipbuilding Corp., Morris Heights, N. Y.; Federal Shipbuilding & Dry Dock Co., Kearny, N. J.; Herreshoff Mfg. Co. Inc., Bristol, R. I.; Maryland Dry Dock Co., Baltimore; The Pusey & Jones Corp., Wilmington, Del.; Sun Shipbuilding & Dry Dock Co., Chester, Pa.; United Dry Docks Inc., 11 Broadway, New York; American Ship Building Co., Cleveland, O.; Defoe Boat & Motor Works, Bay City, Mich.; Great Lakes Engineering Works, River Rouge, Mich.; Manitowoc Shipbuilding Corp., Manitowoc, Wis.; Toledo Shipbuilding Co., Toledo, O.; General Engineering & Dry Dock Co., Oakland, Calif.; Lake Union Dry Dock & Machine Works, Seattle.

Plans for the other projects listed under paragraphs (a) and (c) above were to be issued within a short time.

This large new shipbuilding program for the coast guard, it is estimated, will total about \$7,350,000 divided about as follows: The three 300-foot cutters, \$4,500,000; the three 165-foot cutters, \$1,650,000; and the four harbor craft \$900,000.

In addition to this new shipbuilding the construction program for the coast guard, approved by the public works administration, include major repairs, betterments and renewals of machinery for existing vessels as follows:

Cutters HAIDA and MOJAVE, \$20,000 each, for main turbine repairs.

Cutters HAIDA, MOJAVE, TAMPA and MODOCK, \$90,000 each, for new generators, electrification of auxiliaries, modernization and alteration of quarters, and magazines, also installation of ventilation equipment for quarters.

Cutters SEBAGO, SARANAC and SHOSONE, \$10,000 each for alteration to forced draft blowers.

Cutters SEBAGO, SARANAC, CAYUGA, PONTCHARTRAIN and CHAMPAIGN, \$25,000 for all to rearrange quarters.

Ten cutters, \$50,000 in all, for miscellaneous repair.

Six 125-foot patrol boats, a total of \$200,000 for new engines.

Ten 125-foot patrol boats, a total of \$50,000 for sheathing and repairs.

The total amount involved in these miscellaneous repairs and betterments for vessels of the coast guard is \$755,000.

## Rivers and Harbors Work for U. S. Engineers

The United States army engineers have been working with all possible speed to prepare plans and specifications for specific rivers and harbor projects so that work may be started at the earliest possible moment. Funds for these activities are available in the \$70,000,000 allocated to the war department by the public works administration for river and harbor improvements. One of the projects includes the expenditure of \$3,750,000 for necessary improvements in New York harbor. This was suggested by the district engineer and had been approved by the board of engineers.

By Sept. 15 the war department announced allotments totaling \$5,510,200 for river and harbor work. The largest item was \$2,092,700 for improvements to Calumet harbor and river, Chicago. Improvement of Los Angeles and Long Beach harbors, Calif., calling for an expenditure of \$1,650,000 was the largest item.

Other items included \$80,000 for improvement of the Niagara river; \$485,000 for improvement of Cleveland harbor; \$240,000 for Monterey, Calif.; \$727,500 for Tampa and Hillsboro bays and harbors and \$140,000 for Miami harbor, Florida; and \$95,000 for Richmond harbor, California.

By Sept. 19 the war department allotted \$1,500,000 for improvement of the Houston ship channel, Texas. Other allotments approved called for an expenditure of \$900,000 for improvements of the Allegheny river; \$210,000 for Port Aransas, Tex., and \$219,000 for improvement of Galveston harbor, to Texas City channel.

Such a large volume of river and harbor improvements is bound to be reflected in the need for various kinds of floating equipment.

The obsolete and out of commission United States naval ships, second line light cruisers, GALVESTON and DENVER and the converted yacht NIAGARA, have been sold for scrap at \$16,680, \$15,680, and \$3500, respectively, to the Northern Metal Co., Philadelphia.

## Bunker Prices

### At New York

	Coal Alongside per ton	Fuel oil alongside per barrel	Diesel engine oil alongside per gallon
Sept. 18, 1933..	4.45@4.75	1.15	4.70
Aug. 18.....	4.45@4.75	.90	4.32
July 18.....	4.30@4.60	.90	4.32
June 18.....	4.30@4.60	.80	4.08
May 18.....	4.30@4.60	.80	4.08
Apr. 18.....	4.30@4.60	.80	4.08
Mar. 18.....	4.30@4.60	.80	4.08
Feb. 18.....	4.30@4.60	.80	4.08
Jan. 17.....	4.50@5.00	.80	4.08
Dec. 16.....	4.50@4.75	.80	4.75
Nov. 18, 1932..	4.50@4.75	.80	4.08

### At Philadelphia

	Coal trim in bunk per ton	Fuel oil alongside per barrel	Diesel engine oil alongside per gallon
Sept. 18, 1933..	4.45@4.75	1.15	4.88
Aug. 18.....	4.45@4.75	.90	4.28
July 18.....	4.30@4.60	.90	4.28½
June 18.....	4.30@4.60	.80	4.04
May 18.....	4.30@4.60	.80	4.04
Apr. 18.....	4.30@4.60	.80	4.04
Mar. 18.....	4.30@4.60	.80	4.04
Feb. 18.....	4.30@4.60	.80	4.04
Jan. 17.....	4.50@5.00	.80	4.04
Dec. 16.....	4.00@4.75	.80	4.04
Nov. 18, 1932..	4.00@4.75	.80	4.04

### Other Ports

Sept. 18, 1933	
Boston, coal, per ton..	\$ —
Boston, oil, f. a. s. per barrel.....	\$ —
Hampton Roads, coal, per ton, f.o.b. piers .....	\$0.89
Cardiff, coal, per ton....	13s 9d
London, coal, per ton....	—s —d
Antwerp, coal, per ton....	17s 3d
Antwerp, Fuel oil, per ton	67s 6d
Antwerp, Diesel oil, per ton.....	82s 6d
British ports, Fuel oil....	87s 6d
British ports, Diesel oil.	102s 6d



## Marine Codes Prepared

(Continued from Page 11)

segregated into the following geographical areas; New England, New York, Delaware river and bay, Chesapeake bay, and Hampton Roads including the south Atlantic coast. Ship repairers in other districts may be segregated into such local areas as they may determine. The ship repairers in each local area shall organize a local committee the duty of which it will be to receive, to consider and to attempt to adjust all complaints as to operation and observance of the code within its local area, with appeal where a complaint cannot be adjusted to the code committee by the complainant and the local committee.

Each of the geographical districts shall have a district ship repairing committee. Finally there will be a national ship repairing committee composed of the chairmen of all the district ship repairing committees. This committee shall consider subjects of national scope affecting the industry. Right of appeal from the decision of this committee to the code committee will be allowed all complainants. It will be a function of these ship repairing committees to prepare and submit to the code committee for its approval any additional rules and regulations dealing with local problems in the local areas, and with district problems in the districts.

### Will Recommend Necessary Changes

Included in the rules proposed by the code committee and which was to be considered and discussed at the meeting in Washington on Sept. 26 are: The establishment of a credit bureau to collect and furnish information regarding the credit standing of any customer. The code committee with the advise and assistance of the committees re-

ferred to will from time to time as found necessary recommend to the President through the administrator of the recovery act any modifications and additions to the code necessary to eliminate unfair competitive practices. Each member of the industry engaged in ship repairing shall file with the secretary of the code committee a schedule showing, for ship repairing operations, (1) minimum labor billing rates; (2) minimum billing rates for use of facilities; (3) minimum billing rates for the use of dry docks and marine railways.

Such rates, charges and prices shall be certified not to be below the reasonable cost of such products or service. Many other specific rules and regulations are incorporated under the unfair competitive practices section. To meet the custom and requirements of the Great Lakes, certain modifications are made for ship repairers in this section.

Indefinite, ambiguous and unfair general clauses of specifications covering shipbuilding and ship repair work are to be avoided and from time to time as required the code committee will issue regulations with respect to such general clauses.

North and south in paragraph 4 of the code is defined as follows: "In the north," includes the Atlantic coast of the United States, down to the northern border of the state of Maryland; while "in the south" includes the Atlantic and Gulf coasts from the northern border of the state of Maryland to the southern border of the state of Texas. The whole Pacific coast will have the rates provided for the north in paragraph 4 of the code. Classification under paragraph 4 of the code of shipbuilders and ship repairers on the inland waterways will be defined by the committee.

Provisions for handling questions and complaints arising out of labor conditions are under consideration by the code committee and the national recovery administration and will be incorporated in the rules and regulations when they have been adopted and approved.

## Navy Cross Awarded to Captain Stedman

Another honor has been added to the long list of those conferred on Capt. Giles C. Stedman of the S. S. AMERICAN MERCHANT. This time it is the navy cross, by instructions from President Roosevelt.

This much coveted medal was presented Sept. 12 to Captain Stedman by Capt. W. R. Sayles, U. S. N., chief of staff of the third naval district, on board of the American merchant liner, AMERICAN BANKER and was witnessed by many friends, officials of the United States-Roosevelt line and fellow officers. The medal was awarded for, "Distinguished service as commanding officer of the AMERICAN MERCHANT in the rescue of 22 members of the crew of the British freighter EXETER CITY, sinking in mid-Atlantic on Jan. 20 last, in which he displayed excellent seamanship, keen judgment and professional ability of the highest order and in accordance with the best traditions of the naval service."

In making the presentation Captain Sayles said: "There are times when we who follow the sea discover suddenly something which makes us grateful that we chose such a career and the opportunity to present the navy cross to Captain Stedman for the act for which he is specially cited is one of these times.

"We of the navy consider that the merchant marine is part of it and sincerely hope that the officers and men of the American merchant marine realize that they are an integral part of the national defense and, should an emergency arise, a part upon which the navy must depend."

Seldom has this award, which is most highly prized by American sailormen, been bestowed on anyone during times of peace. On the day after receiving the award Captain Stedman sailed from New York as master of the AMERICAN BANKER. Former honors to Captain Stedman for his brilliant rescue have been reported in previous issues of MARINE REVIEW.

## Illinois Waterway Traffic is Impeded by Low Bridges

While traffic on the recently completed Illinois waterway has increased steadily this year, heavier shipments into Chicago will depend on the installation of new bridges in the sanitary canal which comprises the northern link in this water artery. About 20 existing bridges over the canal, some of them built 30 years ago, have inadequate clearance to accommodate any but the smallest vessels.

Possibilities of early replacement of the bridges are rather poor due to the weak financial position of the Chicago sanitary district. Progress is being made on the installation of other

bridges farther south on the waterway, including that of the Elgin, Joliet and Eastern railroad at Lockport, Ill., which will facilitate barge movement. In the meantime traffic is more heavily concentrated on the lower stretches of the new route, particularly on the Illinois river section.

Reports to the United States engineer, Chicago, show that traffic to Aug. 1 this year on the Illinois waterway totaled 143,235 tons compared with 66,538 tons a year ago. Shipments have consisted principally of grain, sand and gravel, steel and other manufactured products. Most of the traffic has been in long hauls. Lockings recently have averaged about 200 a month, about one-half of which have been pleasure boats.

Formation of new transportation lines has been discouraged in a measure by the bridge situation in the Chicago sanitary district, since operation in that area would necessitate the use of special equipment. Boats of the federal barge line require a clearance of 42 to 50 feet, compared with the canal bridge clearance of as small as 13 feet which prevails during certain periods when high levels exist in Lake Michigan, the regulating agency for the canal depth. The federal barge line has built one boat that is capable of negotiating the sanitary canal bridges but on other shipments into Chicago it is necessary to transfer cargoes at some point down the waterway to equipment of low height.



# Launch Cruiser Minneapolis at U. S. Navy Yard

**L**AUNCHED Sept. 6 at the United States navy yard, Philadelphia, the U. S. S. MINNEAPOLIS is the thirteenth to be laid down of the 18 heavy cruisers permitted the United States under provisions of the Washington and London naval treaties. The Washington treaty limited the size of such vessels to 10,000 tons displacement and to guns of not greater than 8-inch calibre. The London treaty limited the United States to a maximum of 18 vessels of this type and also stipulated that the last three should not be started until 1934, 1935 and 1936 respectively.

Eight of these cruisers were authorized by congress Dec. 18, 1924, and the last of these eight was commissioned March 9, 1931. On Feb. 13, 1929 congress authorized the building of ten additional cruisers to be of the maximum tonnage and armament permitted by treaty. Two of these have already been commissioned and five, including the MINNEAPOLIS, are under construction.

The MINNEAPOLIS embodies a number of changes and improvements in design which have resulted from the experience in the building and operation of her predecessors. The contract for building the MINNEAPOLIS was signed on July 12, 1929. Her keel was laid June 27, 1931. She was launched without unusual incident. A strong up river wind and an unusually high tide were favorable to the launching. She was christened by Miss Grace Laura Newton, daughter of W. H. Newton of Minneapolis, formerly secretary to ex-President Hoover.

## To Be Completed Next Spring

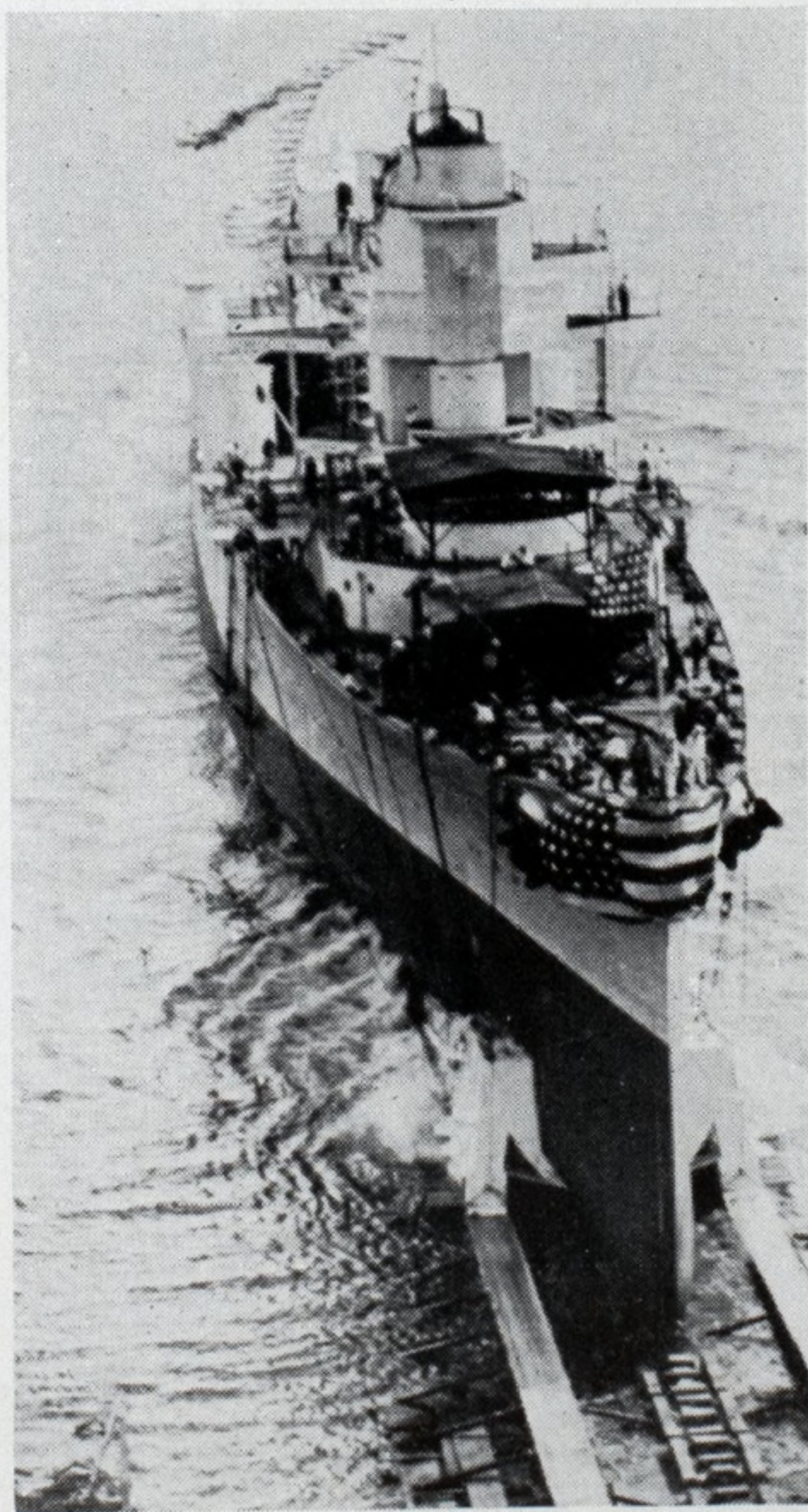
The prospective completion date for the MINNEAPOLIS is April 1, 1934. The new vessel has a standard displacement of 10,000 tons. Her length at water line is 578 feet; beam extreme is 61 feet, 10 inches; her mean draft is 21 feet, 7 inches. Her armament will consist of nine 8-inch main battery guns, arranged in three triple mounts. Her speed it is anticipated will be similar to that of her sister vessel, or about 32.5 knots.

The MINNEAPOLIS is named in honor of the city of Minneapolis, Minn. and is the second vessel of the United States navy to bear this name. The first was a cruiser of 7350 tons built by William Cramp & Sons Ship & Engine Building Co., Philadelphia, at a cost of \$2,690,000. Length of the first MINNEAPOLIS was 413 feet; beam, 58 feet; and her armament consisted of three 6-inch guns, eight 4-inch guns; and two six-pounders. She was launched Aug. 12, 1893 and was christened

by Miss Elizabeth Washburn. She was completed at the League Island navy yard and was commissioned Dec. 13, 1894.

During her long career the first MINNEAPOLIS was at various times placed out of commission and in reserve. At the outbreak of the Spanish-American war, she was assigned to patrol duty on the East coast, and later searching for the Spanish fleet in the Caribbean. After the war, until the fall of 1906 when she was placed out of commission, she was assigned to various duties in the North Atlantic. She was again placed in commission July 2, 1917 and served in the Atlantic with division one of the cruiser force during the war. In January, 1919 she became the flagship of division two of the Pacific fleet, and later flagship of the Train, Pacific fleet. She was finally placed out of commission March 15, 1921 and on Aug. 5, 1921 she was stricken from the navy list and sold.

The German dirigible GRAF ZEPPELIN which on Sept. 18 completed five years of regular passenger and mail service is scheduled to arrive at Miami, Fla., via South America on Oct. 23. After



*Cruiser Minneapolis launched at Navy Yard, Philadelphia, Sept. 6, 1933*

a visit to the Century of Progress exposition at Chicago, the airship will return to Europe from Akron, O., on Oct. 28. A limited number of passengers will be carried on this trip at rates lower than ever before. The Hamburg American line is agent.

## Safety Congress to Meet At Chicago, Oct. 2-6

The marine section of the National Safety council will take an important part in the twenty-second annual safety congress and exposition to be held at Stevens hotel, Chicago from Oct. 2 to 6. The general chairman of these sessions will be Frank H. Cogan of the Delaware, Lackawanna & Western Railroad Co., and the secretary will be Carl W. Cetti of the New York State Merchant Marine academy.

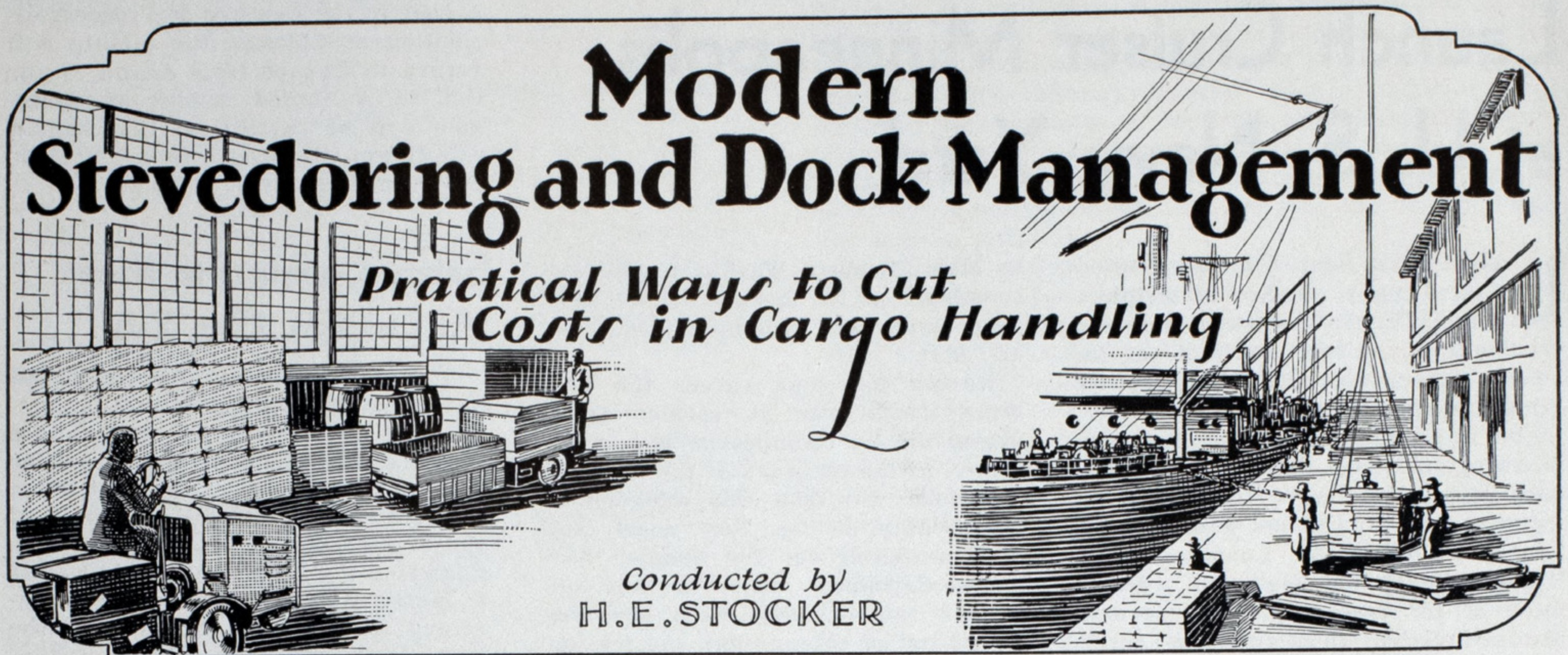
Regardless of improvements, the marine industry still has relatively high accident frequency and accident severity rates compared with the excellent experience of the 31 different industries which report to the National Safety council. Among these 31 industries only five had higher 1932 accident severity rates. These were in order of rank as follows: foundry, quarry, construction, lumbering, and mining.

The most favorable accident frequency rates in the marine industry were made by the following groups: harbor equipment, shipbuilding and repairs, and tankers. The two groups "stevedoring" and "liners" have accident frequency rates more than twice as great as the average for the industry. The groups with highest accident severity rates in order were: tankers, harbor equipment, and shipbuilding and repairs.

At the first program session of the main session, on Tuesday morning, Oct. 2, General Chairman Frank H. Cogan will give a "Resume of Year's Activities." Other features of the program will be: "The United States Shipping Board and Maritime Safety," by Capt. David W. Todd, United States shipping board bureau; "Analyzing Statistics Promote Safety," by C. P. Waite, The Travelers' Insurance Co.; "What the West Coast Is Doing for the Safety of Marine Workers," by Capt. Henry Blackstone, safety engineer, the United States Personal and Indemnity agency.

At the Wednesday morning session, Oct. 4, the topic, "Organizing a Fleet for Safety" will be discussed by Capt. E. W. Fiske, port captain, Standard-Vacuum Transportation Co. Other program features will be: "Marine Safety in the Gulf ports," by Capt. F. E. Ames, manager, safety department, Lykes Bros.—Ripley Steamship Co. Inc.; "Election of Officers"; "Marine Non-safety Pays No Dividends," by Carl F. Vander Clute, admiralty attorney.





# Effect of Fatigue on Production Rate in Longshore Labor Needs Study

By H. E. Stocker

**M**ECHANICAL equipment, on the modern terminal, has been developed to a high point of effectiveness. Little is left to chance in the selection and use of this equipment. The type is selected only after a thorough analysis is made of the conditions on the terminal. All equipment is kept in good working condition, care being taken to guard against rust, corrosion and worn out parts.

Terminal labor, the human machinery, on the other hand, has not been given equal thought and attention. Selection, with the exception of those ports which have decasualized longshore labor, is haphazard. Longshoremen are often driven by their bosses after the point of sheer exhaustion has been reached and passed. A stevedore once said in the author's presence that the only way to get results with the longshoremen was by mule driving tactics. There are cases where longshoremen are discharged after a hard day's work when they are "dog tired" because they lacked the strength to push a truck over a poorly designed gangplank apron.

## Keeping Labor Productive

Such practices are not only inhuman and therefore destructive of social welfare, but they are a source of loss to the employer. Long hours

of work, twenty to thirty hours at a stretch, are followed by days of idleness—and many times injuries put the longshoremen on the shelf or on the human scrap pile. When a truck is thrown on the scrap heap a direct money loss is visualized. When a man is thrown on the scrap heap there is no visual loss of money—he can be replaced without capital expenditure.

The loss to industry in an antiquated personnel policy is the same general character of loss as that which results from the continued use of obsolete equipment.

That the combined waste of money from obsolete personnel policies and obsolete methods and equipment, runs into large sums, is the conviction of those who have taken the trouble to go below surface indications. They have refused to be misled by traditional policies which are not in accord with modern conditions, and the accumulated knowledge of forty years of scientific management in industry.

Scientific studies and the observations of men in many industries have shown that there is a direct money loss from an indifferent or careless policy concerning longshore labor. Industrial psychology has given a great deal of attention to the relation of fatigue to productivity. If careful planning and caring for

equipment pays, why does it not also pay to carefully plan and care for labor?

From its beginning, scientific management has recognized the importance of the part played by fatigue. It has, however, only recently been acknowledged by industry as fundamental to the most productive operations. The conclusion has resulted from the studies and experiments made, as well as by observations of regular operations.

## Need to Study Fatigue

No scientific studies of fatigue have been made in cargo handling. Therefore to start with, the correct procedure is to examine the studies made in other industries, particularly those having to do with materials handling. The effect of fatigue upon production and safety is basic and not related solely to particular operations.

From the results of these studies we find we are justified in studying fatigue in cargo handling and experimenting with the application of methods of reducing fatigue used in other industries. For example, a method used in some industries of reducing fatigue is to provide rest periods. The value of the rest received during the lunch period is fully demonstrated and it has been definitely established that a pronounced



rise in the curve of production follows the noon rest. Additional rest periods during mid morning and mid afternoon are provided in many industrial concerns, these rest periods being regarded as an aid in increasing production and reducing fatigue. The noted industrial engineer Gilbreth states that "more output can be achieved by applying oneself steadily for short periods and then resting than by applying oneself less steadily and having no rest periods."

Rest periods are unheard of in terminal work. If our industrial concerns have benefited by increased production through rest periods, why could not our stevedoring and shipping companies likewise benefit by increased tons handled per hour as a direct result of definite rest periods?

#### Value of Rest Periods

For straight day work, it is well for longshoremen to have a fifteen minute rest period around 10 a. m. and 3 p. m. During these rest periods the laborers should be free to do as they wish—have a cup of coffee and a sandwich, get cooled off or warmed up as the case may be, and to relax. Food and relaxation are the two predominating factors in rest periods. It is granted that these innovations are difficult to inaugurate but the difficulties will be ironed out, and in the end the greater productivity will compensate for the cost.

If the management is sincere in its efforts to reduce fatigue to the minimum, it is necessary that the longshoreman be carefully observed and his working conditions analyzed. Such an analysis would include among other things, illumination, ventilation, heat, food, noise, treatment by bosses and sanitary conditions. Lack of sufficient illumination produces eye fatigue which decreases efficiency and increases the accident hazard. Lack of proper ventilation is a frequent condition which produces unnecessary fatigue. In the summer the longshoremen should be given an opportunity to cool off and in the winter to get warmed up. Here the mid morning and mid afternoon rest periods serve as another useful purpose. The lack of adequate food is an obstacle to high productivity. While it is not necessary to furnish meals as our large industrial companies do, it is essential that the lunch period be long enough to allow the laborers to walk to a restaurant, eat slowly and have a short rest period upon returning to the pier.

Finally, a check on the sanitary facilities of the pier might cause a few surprises. Each pier should have a room for longshoremen provided with wash stands, toilets, lockers for lunches and clothes, chairs and heat in the winter time.

While these causes of fatigue are

classified as "secondary" they are nevertheless real causes and their elimination leads to greater productivity of the longshoremen.

#### More Work, Fewer Accidents

The National Safety council states that "wherever an industrial process involves exhausting work or work requiring constant standing or sitting and especially where the task is often repeated, demands the man's constant and close attention, recesses should be considered."

Cargo handling comes within this classification. Therefore the author discussed the idea of a recess in the morning and in the afternoon for longshoremen with one of the best and most experienced stevedores in New York. Without hesitation he agreed that this practice would be beneficial—that production would be increased. Further studies are now being made by the authors, assisted by this stevedore, and experiments will be started to test out the value of this plan.

That fatigue has a direct bearing on hourly and daily output will not be denied and the general form of the daily production curve where fatigue or the diminution in the power to work resulting from work is the predominating factor in determining the rate of production—as in longshore labor. There is a rapid and early rise in the work curve to a maximum, followed by a fairly definite drop during the remainder of the morning. After the noon lunch period there is a fair recovery followed by a rapid fall throughout the remainder of the afternoon.

It is obvious that there is a limit to the working period, likewise it is obvious that this problem requires proper attention and thought on the part of the management. Long hours reduce the average amount of work done per hour. A certain plant employing a group of 50 men, engaged in heavy labor reduced the working time from 58.2 to 51.2 hours per week. By so doing, the total output was increased 22 per cent. While production figures are not available for longshore operations, it is safe to assume that practically the same results could be obtained.

#### Number of Hours and Output

Studies carefully carried out during the war on the output in night work in a munition factory, where men operated lathes, working twelve hours and twenty minutes show that up until 5 o'clock in the morning the production curve follows the usual pattern. After 5 a. m. production dropped to such a point that almost nothing was produced in the last forty minutes. In view of this it was concluded that it was best to send the workers home at 5 o'clock. By doing this the night's work was

shortened to ten hours and forty minutes.

In the study being made of longshore output in relation to the number of hours worked, the results will probably be similar to the above cases. At least this industrial data amply justifies studies and experimentation in the working of longshoremen to determine more accurately the loss of productivity which follows long working hours and other factors productive of fatigue. There will be periods where the longshoremen must be worked longer hours to finish loading or discharging, but a period in excess of ten hours is to be avoided whenever possible.

It is therefore reasonable to state as a general proposition, that it is uneconomical to work a longshoreman more than ten hours a day. Output after ten hours tends to diminish to a point where it is uneconomical to continue to work tired men.

## Houston Breaks Records

August was a banner month for the port of Houston, Texas. A total of 1,422,851 tons of deep sea cargo passed over its terminal facilities and 90,879 tons of barge and other local traffic was handled, making a grand total of 1,513,730 tons, valued at \$31,582,739. This represented an increase of 81 per cent over August, 1932, in deep sea tonnage, when only 785,388 tons were handled.

The eight months' period, Jan. 1, to Aug. 31, 1933 shows a splendid improvement in deep sea tonnage handled over similar periods in previous years. This figure for 1933 in short tons was 10,124,791 compared with 7,445,529 tons in 1932, and 8,021,784 tons in 1931 and 9,024,827 tons in 1930.

Imports showed a slight increase over August, 1932, while exports increased about 30 per cent. Inbound Atlantic coast tonnage more than doubled and outbound was two and a half times that of the same month last year. Inbound Gulf and outbound Pacific business increased, with outbound Gulf and inbound Pacific slightly less.

The Superheater Co., New York has acquired an interest in and has assumed the management of The Air Preheater Corp., Wellsville, N. Y., manufacturer of Ljungstrom air preheaters. The Air Preheater Corp. retains its corporate identity under new management, and will continue the manufacture of its products at the Wellsville plant. H. S. Colby will remain in the organization as vice president. Its executive offices will be consolidated with those of The Superheater Co. at 60 East Forty-second street, New York.



# Portable Rail Tracks Used in Loading and Discharging

By Robert C. Hill

**D**EVELOPMENT of portable rail tracks for handling package and sacked cargo in a ship's holds has aroused much interest among Pacific coast shipping men. It has worked so successfully that it is regarded as one of the important improvements in cargo handling practice in recent years.

The idea originated with W. D. Gould, manager of the Matson Terminals, Seattle, and operating manager for the Puget Sound district of the Matson Navigation Co. While watching longshoremen struggle with four wheel trucks in hauling sacks of sugar from the wings and stern sheets to the square of the hatch he concluded that there must be some method whereby such back-breaking labor, fraught with hazard to both men and freight, could be relieved.

volume of package goods such as sugar in sacks, cased pineapples, shingles and general cargo. This is usually stowed in the wings and alley ways on each side of the engine and in the stern sheets. Owing to the tides we do not have side ports and all cargo is handled through the hatches. Under the former method cargo was hauled from place of rest to the square of the hatch on four-wheeled trucks, pushed by four men with a fifth handling the tiller. Over rough planking and on an uneven surface it was a back-breaking job with great danger of injury to the man at the tiller as it often swung back and forth. Time was lost in removing obstructions from under the wheels.

"With the rail track, conditions are vastly improved and of no small

terminals has eighteen 16-foot sections of straight track as well as four sections of curved rail, each 8 feet long. These are used for rounding stanchions and ventilators. At the end of the track is fitted a clamp with a butterfly nut to prevent the wagon running off.

## Use Special Steel Wagons

Special steel wagons were designed by Mr. Simon, four being in use. They are entirely of steel and so strongly constructed that their capacity is almost unlimited although the average load weighs  $2\frac{1}{2}$  tons. Mounted on four wheels, securely braced, is a flat steel top 72 by 42 inches. At each corner is a hook under which the bridle sling fits for lifting the wagons into and out of the ship's holds. Each car is provided with a brake, operated either by hand or foot, from either end. The brake shoes are of hardwood lined with webbing. The wheels are equipped with grease cups. They are double flanged and of such width that they can negotiate the curves without jamming. The wheels are 11 inches in diameter and 2 inches wide, so that the truck is only 11 inches above the floor. Its center of gravity is so low that even on uneven surfaces there is no danger of overturning with high loads.

The equipment is compact and when not in use occupies only a few square feet on the wharf. When required it is hauled to ship side, lifted into the holds with ship's gear and the tracks are laid rapidly as needed. It has been found advantageous to use two parallel tracks at one time and there is sufficient track to run 100 feet back from the hatch. Two men can push a fully loaded truck and often they are aided by gravity. When under the square of the hatch the entire unit of cargo is lifted with one operation as it is all loaded on sling boards placed on top of the steel wagon. The complete slingload is lowered to dock trucks which are hauled to place of rest by gasoline jitneys, the board sling being continually in use.

While the rail track has been in use but a short time it has demonstrated its utility. At the Matson terminals it has been used only for 'tween deck operation but according to Mr. Gould it is equally adaptable for lower hold work. All that is necessary is to lay dunnage on top of other cargo and upon this the rail sections can be placed and used. Track and wagons are adaptable for either loading or discharging.

The fifth annual meeting of the Pacific coast accident prevention conference will be held at Fairmont hotel, San Francisco, on Oct. 26 to 28 under the auspices of the San Francisco Shipowners' and Waterfront Employers' associations.



Portable rail track in 'tween deck of ship. Used at Matson terminals, Seattle. Moving sling load of shingles to wings from square of hatch

He consulted with L. H. Simon, of the Simon Engineering Co., who has made a specialty in developing cargo handling devices. At first experiments were made with low hand trucks with wide wheels, rubber covered. But this was not satisfactory.

## A Portable Rail Track

Finally the portable railroad track was designed and cargo wagons developed for the purpose. The results have been gratifying. The job is easier for the men, efficiency has been increased and damage to cargo has been reduced to a minimum. Danger of injury to the men has been practically eliminated and the wear and tear on the ship's decks and hatch coamings has been greatly reduced.

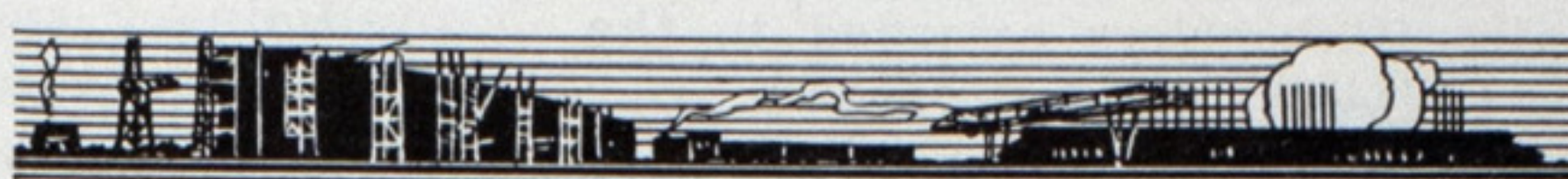
"Our ships are of the shelter deck type with engines amidships," said Mr. Gould to the writer, representing MARINE REVIEW, "We handle a large

importance is the mental attitude of the longshoremen. While we use the same number of men the job is so much easier that time is saved while the wear and tear to freight and the ship's floors and hatches is a considerable item. Handling from 10,000 to 20,00 sacks of sugar or cases of pineapples for each ship the results are readily apparent in decreased cost and increased efficiency. The new equipment soon pays for itself and can be used indefinitely."

The rails are made in 16 foot sections. Standard mining, 2-inch rail is used, the entire section being welded with four cross pieces of steel to tie the section together. Width of the track is 31 inches. At one end of each section are fish plates into which the adjoining section fits and is held without bolting. Each section has handle bars at each corner by which it can be carried by two men. Matson



# Useful Hints on Cargo Handling



**M**ISTAKES have been made in ship design because of the acceptance of tradition without proper study and analysis. Probably the most glaring example of traditional design, handed down from the days of the sailing ship, is a steamer's rigging. The usual two or four shrouds secured to the ship's railing were necessary, no doubt, in sailing ships. But why should this custom be followed today? Stresses in the rigging of a steamer are quite different, both in nature and degree to the stresses in the rigging of a sailing vessel.

The accompanying diagrammatic cross section of an ordinary 8500-ton steamer shows on one side the present type of rigging, with shrouds and turnbuckles at the rail, obstructing the deck space and limiting the swinging radius of the derricks. The other side of the diagram represents what is considered a better arrangement, with two shrouds made fast to the mast table inboard of the derricks and cargo ventilators, thus giving a clear deck and perfect freedom for swinging the cargo boom. In case of lifts of more than five tons suitable preventors may be rigged. With this arrangement the swinging radius of the derricks is increased so that number one derrick may be used for number two hatch and vice versa. This gives the vessel's cargo lifting gear much greater flexibility.

One of the obvious objections to securing the shrouds in the new manner is the question of proper support for the mast, not only to serve safely its function in cargo handling, but also to stand up under severe pitching and rolling in the heaviest kind of weather and in all conditions of the ship.

It is a simple problem to make the necessary stress calculations for the extreme conditions of position and loading of cargo booms. With an ample factor of safety it is then possible to determine the proper specifications for the rigging to safely meet the well known dead loads of cargo handling. There would seem to be, however, more uncertainty as to the stresses set up by the whipping action due to violent rolling and pitching. The feeling undoubtedly exists that it might be dangerous to shorten the purchase of the shrouds by moving them so far inboard. This is something which must be carefully considered. It will be necessary to determine if this rather than car-

*THIS page is being devoted to short items on all matters having to do with the more efficient turn-around of ships. These items are intended to be of a helpful nature.*

*We will welcome for this page brief descriptions, illustrated if possible, of any better or safer way of performing any function in cargo handling. Also, any questions submitted will be answered by the editor.*

go handling represents the severest strain the mast is subjected to.

The arrangement suggested would be of evident value in all trades where deck cargoes are carried and also for long steel, piling and bulky packages. There is also the further advantage that by being able to swing the derrick through an arc of nearly 300 degrees the cargo booms are available as required in doubling up for any adjoining hatches.

## Cargo Handling Equipment

**A**N ARGUMENT offered in favor of dock cranes in preference to ships gear is that because the cranes have a wide range over which general cargo may be deposited, congestion on the terminal alongside the hatches is avoided. This argument had some foundation before the advent of

modern cargo handling equipment such as tractors and trailers which permit removal of the cargo as fast as it is landed. With a properly coordinated modern operation flexibility is obtained at a comparatively small expense for equipment. Tractors and trailers and similar equipment can be moved readily whenever needed but dock cranes are limited in their usefulness to a comparatively small area. However, there are circumstances in which the properly designed crane can be used to great advantage in speeding up cargo handling and in reducing the cost of operation.

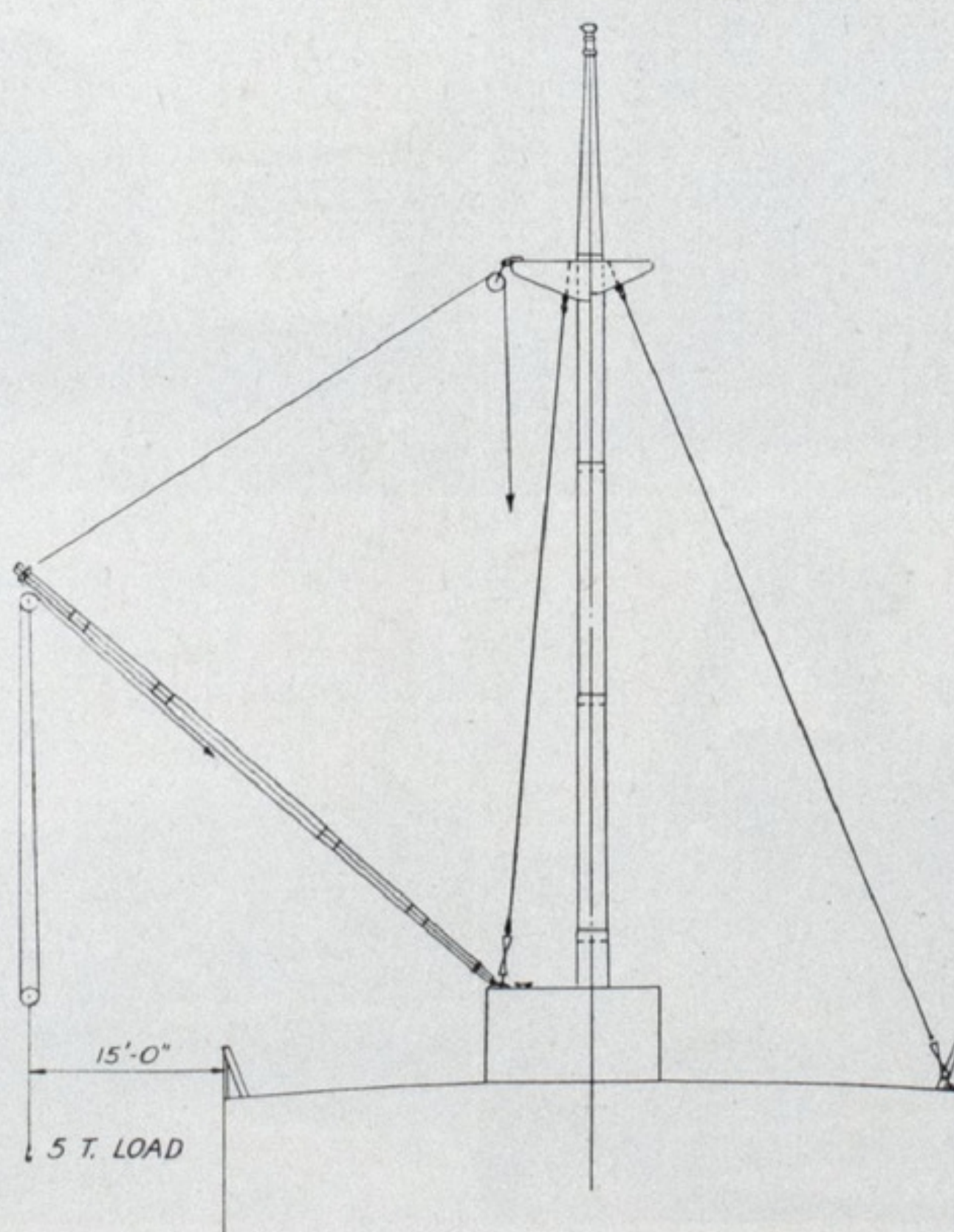
## A Flexible Organization

**T**HE actual character of shipping organizations is not the result of careful planning but planning and the interaction of a multitude of forces which finally reach equilibrium along certain lines. Because of this, it is important not to have a rigid plan of organization but to have an organization which is flexible so that adjustments can be made quickly as circumstances change. This flexibility is gained with little difficulty in small organizations. It is in large organizations that study of "organization engineering" and experimentation is vitally necessary to attain the best results in the long run.

## Sufficient Terminal Space

**A** WELL designed ship and an up to date cargo handling operation will have much of their effectiveness nullified if terminal space is insufficient. This does not necessarily mean that elaborate terminals must be provided. However it is necessary to analyse the handling of cargo with the objective of obtaining the lowest cost per ton, taking into consideration capital charges, terminal rental as well as stevedoring costs. Often much can be accomplished by increasing the tonnage capacity of the terminal by use of mechanical equipment for piling cargo.

One large terminal has inaugurated the practice of having the ship's officers in complete charge of the stevedoring on the ship instead of acting as more or less passive inspectors of the work of the stevedore. It is reported that this method has proved successful.



*New arrangement of securing the shrouds to the mast table. On the right the customary method is indicated*



## The New Aircraft Carriers Larger than Ranger

The contract base price for the two new aircraft carriers awarded to the Newport News Shipbuilding & Dry Dock Co., is \$19,000,000 for each vessel, compared with about \$15,500,000 for the RANGER. The contract time for completion is 36 months for the first vessel and 40 months for the second vessel, compared with 42 months for the RANGER. The time allowed for the new vessels is extremely short considering the various special features in connection with the work.

The new vessels are of over one-third more tonnage than the RANGER. The general dimensions of the new vessels and the RANGER are, respectively, approximately as follows: Length overall, 803 feet, and 765 feet; beam extreme, 112 feet, and 94 feet; draft, 20 feet 6 inches, and 24 feet 4 inches; displacement, 20,000 tons, and 13,800

tons; number of officers and crew, 1830, and 1460.

Complete contract plans and specifications were furnished for the RANGER at time of bidding, while only preliminary specifications and incomplete plans were furnished for the new vessels. Contract plans and specifications must be prepared by the shipyard and will take several months. After approval by the navy department these plans and specifications will become a part of the contract.

The RANGER was started under a 44-hour week, later changed to a 40-hour week and on Aug. 1, 1933, to a 32-hour week. The new vessels must be built under the 32-hour week. It, therefore, appears that the shipyard must do about one-third more work per ship within about two-thirds of the corresponding time allowed for the RANGER.

Work in the drawing rooms commenced immediately after bids were opened and is progressing as rapidly as possible. By special arrangement

permission has been granted to work 48 hours per week on design until Feb. 1, 1934. The yard is now actually working 44 hours per week in order to hasten the completion of contract plans and specifications and the ordering of material with the objective of placing work in the yard at the earliest possible date.

The secretary of the navy has announced that these two new aircraft carriers are to be given the names YORKTOWN and ENTERPRISE. In the shipyard the vessels will have the designation of hulls Nos. 359 and 360.

The Todd Shipyards Corp. has completed the installation of a five section floating dry dock at its Tietjen & Lang Dry Dock & Repair Co. plant, Hoboken, N. J. This dry dock is 492 feet long, 117 feet in breadth and has a lifting capacity of 10,000 tons. The new dry dock commenced operation on Sept. 7.

## Dahlia, New Lighthouse Tender Launched

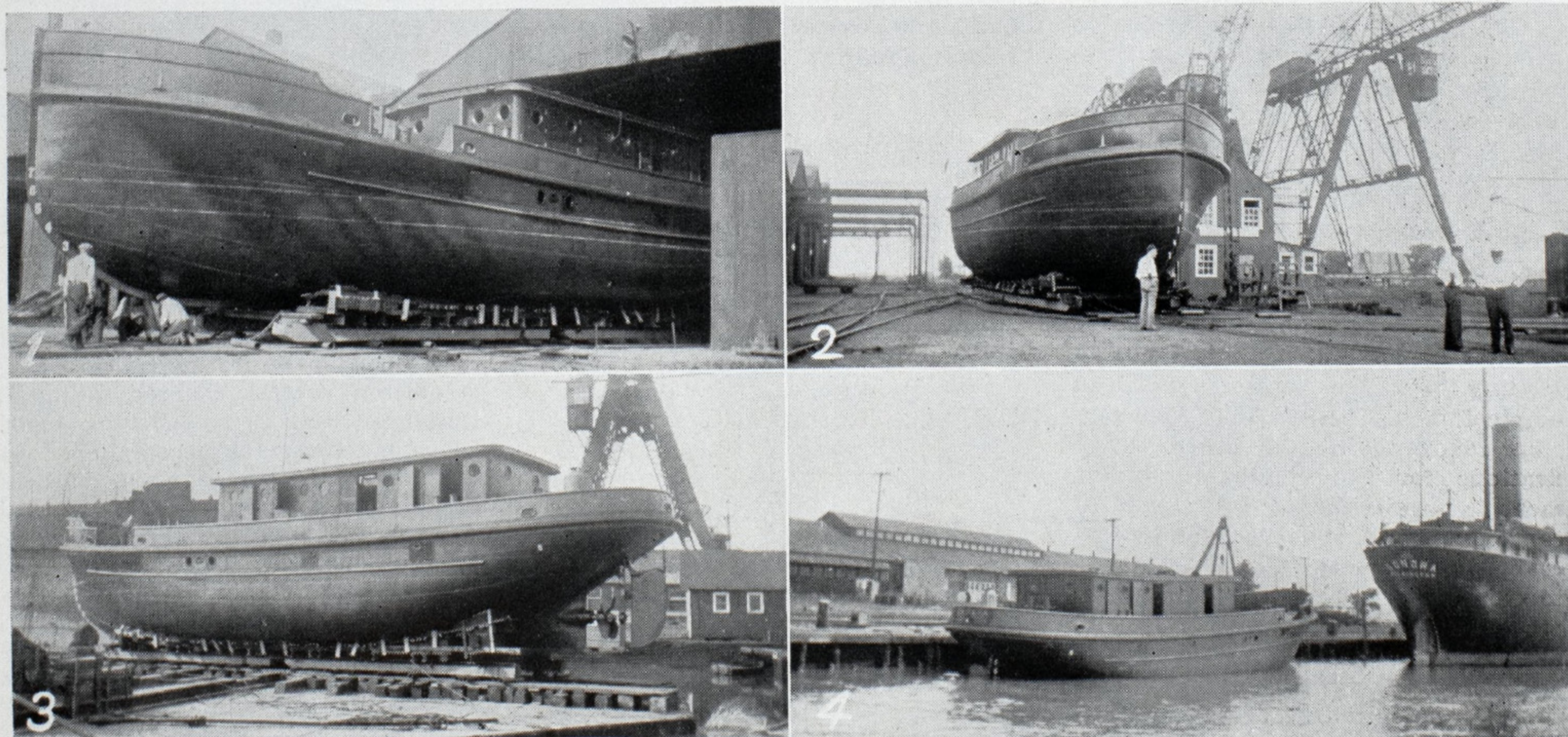
THE lighthouse tender DAHLIA is nearing completion at the yard of the Great Lakes Engineering Works, River Rouge, Mich. Bids for this vessel were opened on Feb. 15 last, and the lowest bid was \$66,566. As shown in the accompanying illustrations, this vessel was built under cover and launched by rolling to the water's edge and on to the floating dry dock. The launching took place Aug. 26. She will be completed

about the middle of October.

The principal dimensions of the new vessel are: Length overall, 81 feet, 2 inches; length between perpendiculars, 72 feet; breadth molded, 20 feet; and depth molded, 9 feet, 6 inches. The mean draft is 6 feet, 6 inches, and the displacement at this draft is approximately 160 tons, allowing for a useful load of 20 tons. The bunker fuel capacity in diesel fuel is 6 tons. Speed of the vessel is rated

at 7 knots under ordinary conditions.

The main propelling machinery consists of one 4 cycle, six-cylinder Winton diesel engine with 10-inch diameter cylinders and 14 inches stroke. This engine, directly connected to the propeller, develops 235 horsepower at 350 revolutions per minute. For heating there is one Almy watertube boiler of 77 square feet heating surface, operating at 80 pounds pressure and burning oil.



Lighthouse tender Dahlia under construction at Great Lakes Engineering Works, River Rouge, Mich. Built inside of shop. Placed on skids and rolled about 300 feet to floating dock. Launched Aug. 26 by submerging dock. 1. Emerging from the shop. 2. On the way to the water's edge. 3. About to be placed on floating dock. 4. Afloat alongside pier



# Up and Down the Great Lakes

Freight Increases—Large Ore and Coal Shipments—Lake Levels—Old Songs—Vessels in Service—Wages Increased

IRON ore traffic continued to increase and reached a total of 5,277,137 tons during August as compared with 3,461,141 tons during July and only 748,189 tons in August last year. The volume of wheat was considerably lighter than last year, but flour increased and also up bound coal. The total traffic amounted to 7,690,863 tons during the month of August or almost two and a half times the tonnage for the same month last year. All of the above applies to traffic through the United States and Canadian locks at the Soo.

The total freight traffic through the Welland ship canal during the month of August was 1,211,652 tons which was an increase of 49,307 tons over the total tonnage for August, 1932. Wheat shipments declined by 132,470 tons or 4,415,670 bushels. Barley decreased by 34,206 tons, oats by 17,130 tons, and petroleum and oils by 20,840 tons. Five other commodities showed small decreases, but all other commodities were heavier than in 1932. Bituminous coal increased by 53,671 tons; merchandise by 50,265 tons; cement, brick and lime by 27,628 tons; pulpwood by 20,768 tons; corn by 19,619 tons; gasoline by 19,370 tons; and flour by 17,739 tons. Total traffic for the season of 1933 to Aug. 31 was 5,268,693 tons, as compared with 4,760,141 tons for the corresponding period of 1932.

Freight using the St. Lawrence canals during August amounted to 979,522 tons, or 40,382 tons more than for August, 1932. Pulpwood was heavier by 32,696 tons, iron ore by 28,587 tons, paper by 12,355 tons, petroleum and oils by 15,781 tons, gasoline by 11,085 tons and anthracite coal by 12,147 tons. Wheat decreased by 99,751 tons, oats by 16,029 tons, barley by 32,012 tons and bituminous coal by 15,492 tons. From the opening of navigation to Aug. 31, 1933 the total traffic using the canal amounted to 4,000,722 tons, as compared with 3,816,593 tons for the same period in 1932.

## William G. Mather Resigns

After 41 years of service William G. Mather, president of the Cleveland Cliffs Iron Co., Cleveland, has resigned from this office. He was succeeded by Edward B. Green, for many

years chairman of the executive committee of the Cleveland Trust Co.

Besides its large interest in iron ore, this company is the third largest bulk freight vessel company on the Great Lakes, owning 21 vessels of 164,604 tons carrying capacity. A. E. R. Schneider, who has been in charge of the vessel interests of the company for years, will continue in this capacity.

## August Lake Levels

The United States Lake survey reports the monthly mean stages of the Great Lakes for the month of August as follows:

Lakes	Feet above mean sea level
Superior .....	602.85
Michigan-Huron .....	578.55
St. Clair .....	574.36
Erie .....	571.47
Ontario .....	244.76

Lake Superior was 0.04 foot higher than in July and it was 0.02 foot lower than the August stage of a year ago.

Lakes Michigan-Huron were 0.19 foot lower than in July and they were 0.03 foot higher than the August stage of a year ago.

Lake Erie was 0.31 foot lower than in July and it was 0.02 foot lower than the August stage of a year ago.

Lake Ontario was 0.41 foot lower than in July and it was 0.83 foot lower than the August stage of a year ago, 1.21 feet below the average stage of August of the last ten years.

## Buffalo Strike is Settled

Grain shipments on the Great Lakes were greatly impeded during the first two weeks of September by a strike of the Grain Elevator Employees association and Grain Shovelers' union at Buffalo. About 1000 men were involved. The strike was settled Sept. 13, and the men returned to work at noon on Sept. 14. Representatives of the strikers announced that their fight was successful. In the contract signed by the elevator operators, the employees union will be recognized. The men will work a 40-hour week and receive double pay on all holidays and a mini-

mum of 65 cents an hour. Union men will receive preference for jobs.

The Grain Handling Corp. agreed to a 20 per cent wage increase for the shovelers and to a reduction of from 10 hours a day to 8 hours. The shovelers also won union recognition, pay for holidays, and double pay if they work on holidays.

Some 15 freighters with 3,000,000 bushels of grain were waiting to be discharged when the strike ended. It is estimated that more than 2,000,000 bushels of grain were diverted from Buffalo to Canadian and Ohio ports. Also, a number of charters for cargoes bound to Buffalo were canceled. The elevator operators loss from diverted cargoes is estimated at \$100,000 and the strikers lost about \$20,000 in wages.

## Songs of the Great Lakes

For several years Ivan H. Walton of the University of Michigan, Ann Arbor, Mich., has been assembling some of the lore of sailing ship days on the Great Lakes. And he has succeeded in bringing together a considerable amount of it, including (1) chanteys and amusement songs; (2) legends and tales that were told to "greenhorns"; (3) weather signs and rhymes; (4) beliefs and superstitions; and (5) mottoes and customs.

The fragments collected indicate that especially during the schooner period there was quite an abundance of this material, well known to the thousands of lake sailors who, to paraphrase an old lake song, "In freshwater vessels their living did make." There were many songs such as "The Bigler," "The Red Iron Ore," "The Persian's Crew," "The Antelope," and others which told of the boats and their cargoes, trips, races, crews, triumphs, and disasters.

A large part of this material is now widely dispersed and much of it is forgotten and lost. An attempt is now being made to assemble and make available what still remains of this important contribution to American folklore, and also to make known some measure of the human or romantic aspect of the Great Lakes. Anyone having any of this material or information about any of it, is requested to communicate with Mr. Walton.



## Vessels in Service Sept. 15 in Lakes Bulk Trade

On Sept. 15, 217 lake bulk vessels out of a total of 330 were in commission, representing 68.44 per cent of the total carrying capacity of the fleet, according to a statement compiled by A. B. Kern of the M. A. Hanna Co.

Though the same number of vessels were in commission, there had been some additions and some withdrawals. The Interlake Steamship Co. placed six additional vessels in commission, all in the ore trade, giving this company a total of 29 vessels in commission, with 27 in the ore trade. Hutchinson & Co. withdrew three vessels from service, all from the ore trade. Bethlehem Transportation Corp. withdrew four vessels from the general trade leaving nine still engaged in the ore trade. The Great Lakes Steamship Co. added one vessel to the ore trade. Boland & Cornelius withdrew three vessels, keeping six in operation, three of these in the ore trade. Midland Steamship Co. added another vessel making a total of six, all engaged in the ore trade. McKinney Steamship Co. placed one vessel in the ore trade. D. Sullivan & Co. had two vessels in operation, both engaged in the ore trade.

The net result of these withdrawals and additions and shifting of employment of the bulk fleet is the addition of 14 vessels in the ore trade, making a total of 199 vessels carrying ore on Sept. 15. The total number of vessels in commission on Sept. 15 was 217, the same as on Aug. 15, with the difference that of these only 18 were exclusively engaged in other than the ore trade, as compared with 32 in other trades on Aug. 15.

On Sept. 15 the department of marine, Ottawa, Canada, issued a notice to mariners that the navigation draft of the Lachine canal had been reduced to 13 feet, 6 inches.

## Ore Shipments Increase

During August, shipments of ore from upper lake ports amounted to 5,100,702 tons as compared with 721,587 tons for the month of August, 1932. Up to Sept. 1, 1933, a total of 10,795,398 tons of ore had been shipped from upper lake ports, compared with 1,749,927 tons up to Sept. 1 a year ago. Balance of ore on dock at Lake Erie ports on Sept. 1, 1933 amounted to 4,895,524 tons, compared with 5,267,689 tons Sept. 1, 1932.

The large increase in ore movement this year compared with last year has continued unabated. The

increased movement in August this year, compared with August last year, amounted to 4,379,115 tons. Up to Sept. 1 this year 9,045,471 tons more of ore had been moved than in the same period last year. If the same rate continues the total movement for this year will be at least 25,000,000 tons. There are no present signs of a let-up. As a matter of fact there were 14 more ore boats in commission on Sept. 15 than on Aug. 15, making a total of 199 vessels engaged in that trade.

## Heavy Coal Movement

Coal shipments from Lake Erie ports between the middle of August and the middle of September averaged over 1,100,000 tons per week. The total movement for the present season up to Sept. 18 amounted to 21,399,481 tons, as compared with 14,419,704 tons for the corresponding period of 1932. This was for cargo coal.

In addition to cargo coal vessels continued to move greater quantities of bunker coal, bringing the total for the season to Sept. 18 up to 647,190 tons, as compared with 356,025 for the corresponding period of 1932.

The total coal movement, cargo and bunkers, for the season 1933 to Sept. 18, was 22,046,671 tons, as compared with 14,775,729 tons for the corresponding period of 1932 and 21,820,937 tons for the same period in the season of 1931.

From these figures it will be noted that the movement of bituminous coal on the lakes this year is close to 50 per cent greater than a year ago and is a little over 200,000 tons more than the movement in the same period in 1931. It looks now as if the coal movement for this season will materially exceed that of the year 1931.

## New Cruise Agreement

Believing that cruises to the West Indies this coming fall and winter will be more popular than ever, the Atlantic lines, both foreign and American who have any interest in this business, on Sept. 2 are said to have adopted an agreement, subject to approval by the shipping board, fixing on a maximum number of 71 special cruises as compared with 59 for last year.

This agreement which was entered into at a meeting of the transatlantic passenger conference, New York, is to be effective from Dec. 1 to Feb. 28 next. Rates will be slightly higher than last year and the lines are also pledged to observe the fares established by the conference. Commissions to agencies will be increased to 10 per cent in place of 7½ per cent last year.

## Wage Increase is Voted, Study Lakes Code

On Aug. 28 George A. Marr, vice president and secretary of the Lake Carriers association, Cleveland, announced that the executive committee of the association had voted an increase of 10 per cent in wages for employes on Great Lakes' vessels, owned by members of the association, effective Sept. 1. It was said that this affects approximately 6000 men.

It was pointed out that wages on the Great Lakes had not been reduced as much as those in the steel and iron ore industries and the 10 per cent increase now authorized brings to the men on the ships the same benefit accorded by recent increases to the workers in these allied industries.

At the same time it was made known that the executive committee of the Lake Carriers association was considering a code under the N.R.A. for lake shipping. A committee was appointed to confer with William H. Davis, deputy administrator for the N.R.A. detailed by the administrator to consider particularly the matter of a code for the shipping industry.

Since this announcement the Lake Carriers' committee has been devoting much time to the study of a code. Mr. Marr was unable to give any further definite information on Sept. 21, as this is written, except that progress was being made and that developments of a concrete nature were expected within a short time.

In the statement issued on Aug. 28 it was made clear that the Lake carriers desire to co-operate fully in the purposes of the national recovery act, and that they welcomed the appointment of a deputy administrator who will assist them in making the act applicable to the peculiar conditions of the industry.

Specific reference was made to some of the difficulties involved in preparing a code for lake interests such as the fact that they are already under various forms of government control and regulations, under the interstate commerce commission, the department of commerce and the La-Follette seamen's bill. Also the Lake carriers, in certain trades, have to meet the competition of Canadian vessels, and some of the carriers are in competition with railroads.

An excellent source of information on valves and valve layouts is offered in a new booklet containing 264 pages recently issued by Jenkins Bros., 80 White street, New York. All features of design and construction are clearly and fully described. The last section of the book contains many phases of engineering data constantly needed where valves are used.



# Personal Sketches of Marine Men

Capt. John F. Milliken, President, United Licensed Officers Association

By Ben K. Price

**R**ECENTLY elected head of an association numbering 6000 men including deck and engineer licensed officers of the merchant marine.

**F**OR over twelve years as secretary and treasurer, he has been the active head of the leading American deck officers' association.

**O**F A Yankee seafaring family, he knows and recognizes good seamanship and that it is essential for the success of American shipping.



**I**N THE selection of Capt. John F. Milliken as president, members of the newly organized United Licensed Officers association, New York, chose a man who in his own right and by inheritance from a long line of hard bitten seafaring forbears is well qualified to represent the fine traditions of American seamanship. Moreover, his long and successful services as secretary and treasurer of the Neptune association fit him for the more prosaic task of looking out for their material welfare.

Now, as head of a steadily growing organization, which since its inception June 1 has reached a membership of 6000 licensed officers of the merchant marine, those who know him confidently believe that he will display qualities of leadership which alone can maintain the respect and confidence of the officers and the operators.

Captain Milliken comes from a family of seafaring folk—back for several generations. His great grandfather, Alexander Milliken commanded the privateer *FAME*, a 30-tonner, carrying two guns, which in the war of 1812 captured and held for the United States all that section of what is now Maine, between the St. Croix and the Penobscot rivers. His father, Capt. John F. Milliken began his seagoing experience by sailing around the Horn at the age of 11. His three brothers are all seagoing men. His mother's father lost his life on a vessel out of Gloucester, in a famous blow of the late eighties. And so the record reads—they scarcely come much saltier.

Born in Boston, Dec. 9, 1890, Captain Milliken was raised at Malden, Mass. and graduated from high school there. He afterwards attended, for various periods of time, Dean academy; Holy Cross; Sheffield Scientific school, Yale university; Gettysburg college; and Massachusetts Institute of Technology. Throughout his peregrinations at the higher seats of learning, two things stand out; he was an enthusiastic and brilliant athlete, and he was a good student. His football record makes a bright page in the annals of sport.

In 1916 he joined the personnel department of Remington Arms Co. to organize and coach—and also play

on—a company football team. He spent a year with this company gaining much practical experience in various departments—and developed a championship football team. The next year found him with the Winchester Co. where he was equally successful as an organizer and coach of a first class football team.

When this country entered the World war he reported at the Charlestown navy yard with a third mate's license which he had earned by experience at sea between and after attendance at school. Knowing of his football reputation he was offered a berth as yeomen to give time on the side for football. This did not appeal to him and he went to New York and sailed on the Standard Oil vessel *TIGER*. Later he transferred to the *EAGLE* in army transport service.

After the war he sailed as second mate on the *WEST HUMHAW*, the first merchant ship to enter Germany from this side after the signing of peace. Later he sailed as master on several shipping board vessels, including the *NIPMUCK* and the *COCONIO*, and then for a time served ashore with the shipping board in New York. Again wishing to go to sea, he shipped as mate on the *LACKAWANNA VALLEY* to England, France and the Baltic.

He has always taken a leading part in the protection of the interests of merchant marine officers, and has also received recognition by the industry. He is a member of the executive committee of the American Marine Standards committee, and head of its committee on safety of life at sea. He was instrumental in organizing the annual lifeboat race which has been a feature in New York harbor ever since.

Representing the Neptune association he arranged the celebration for Capt. Paul C. Grening on his return to New York after his famous exploit in rescuing the crew of the Italian ship *IGNAZIO FLORIO*, which foundered in the Atlantic in October, 1925. Captain Grening is the first American in peace time to be accorded the honor of an official greeting at the Battery and a parade up Broadway to the City hall. He is the first merchant ship captain ever to be thus honored in that city. Later Captain Milliken organized the celebration for Captain George Fried after his rescue of the *ANTINOE's* crew.



# Smoke Abatement is Possible by Improved Combustion

By William G. Christy

**F**ROM the mechanical side the reduction of smoke on floating equipment is an entirely different problem than in the case of stationary plants. It is far more difficult because lack of room on board floating equipment limits combustion space. And limited combustion space is the heart of the smoke problem.

Burning bituminous coal as fuel, and firing by hand, a direct move toward smoke abatement in an industrial plant would be the installation of suitable stokers, pulverized coal equipment or even to change over to oil burning. This cannot be so readily done for a tug, ferry or lighter, though, of course, there have been many instances even in this type of craft where a change has been made from coal to oil as fuel. To improve on coal burning, it may be difficult if not prohibitive to increase the combustion space; to change to oil, especially in old vessels, arranging for suitable bunker space is sometimes a difficult problem.

## Complete Combustion Necessary

Every engineer will agree that to eliminate smoke from a boiler plant it is necessary to obtain complete combustion of the fuel in the firebox. To accomplish this either one of two things must be done: 1. Use fuel of low enough volatile content to burn completely in the available space. 2. Obtain by some means the required mixture of oxygen (air) with the volatiles in the fuel so that it will burn completely.

Three factors enter into complete combustion. They are time, temperature and turbulence. Assuming that there is available sufficient oxygen (air) for the amount of fuel being used; then, for complete combustion, there must be: 1. Time for the operation to take place, or in other words, the proper amount of combustion space. 2. Sufficient temperature, that is, a fire hot enough to give a temperature above the ignition point of any constituent of the fuel. 3. Turbulence, that is, an intimate mixture of oxygen with the volatiles of the fuel.

The word turbulence expresses exactly what is required in the manner of introducing air over the fire especially if the combustion space is too small. In other words, insuffi-

ciency of the time factor may be overcome to a great extent by increasing the turbulence.

What methods then are to be used to attain a state of complete combustion in the firebox? Practical experience has shown that for many tugs and other small craft it is often possible to obtain nearly smokeless performance by simply changing the coal and by firing light, and frequently. If a high volatile coal is being used, practically smokeless operation can often be obtained by switching to a low volatile coal, depending upon the type of boiler and the load carried. A low volatile bituminous coal in this case is one having a volatile content of less than 20 per cent. This was the first thing that was done for New York harbor craft and a great deal of black, sooty smoke was eliminated.

If a change of coal cannot be made good results can be obtained by "operating" on the boilers. The use of steam air jets in a marine boiler using soft coal, hand fired, will give the turbulence required to improve combustion and the smoke will be diminished. In a Scotch boiler three jets are usually installed in each furnace. They are placed over and at the corners of fire doors, 12 to 16 inches apart, and are generally pointed toward the top of the bridge wall, or to strike at least six inches above the top of the fuel bed. A 2-inch induction tube is recommended with a  $\frac{1}{8}$ -inch steam jet, to induce air at high velocity over the fire, thus giving the required turbulence.

## Supplying Enough Air

After considerable research work and practical testing, a jet for this purpose was developed at Stevens Institute of Technology, Hoboken, N. J., under the guidance of Col. Elliott H. Whitlock, one of the country's recognized combustion experts. This is the most efficient jet known and gives the greatest amount of air for the smallest quantity of steam. Tests have shown that at least a 2 per cent saving in coal is made using the "Stevens" jet, after allowing for the cost of steam used. The air velocity with this jet is 3000 feet per minute at a point 3 feet from its end. Ten pounds of air are supplied for each pound of steam. The steam used averages 0.05 pound per pound of coal. Quick opening valves should be used

as the jets are turned on for only two or three minutes after firing or barring the fire.

A number of tugs and ferries in New York harbor have been equipped with this type of jet and it has been found that it measures up to the tests. It is not patented and is inexpensive. Complete information will gladly be provided by the department of smoke regulation of Hudson county, N. J.

## Magill Succeeds Bundy

Emmet J. McCormack, president of the Maritime association of the port of New York, on Aug. 28 announced the appointment of John P. Magill as manager of the association to succeed the late C. Lynn Bundy.

The appointment became effective at once. Mr. Magill is well known in steamship and railroad service with which he has been connected for the last thirty years. He has done much work for the American merchant marine and for the port of New York, and for many years has been active in the affairs of the Maritime exchange, serving for a number of years as vice president of the association and as chairman of the steamship committee. He has also acted as special representative of the association at hearings dealing with shipping groups. For some time he headed his own firm of John P. Magill & Son and was well known as a ship operator and steamship broker.

The untimely death of C. Lynn Bundy, for many years manager of the Maritime association of the Port of New York, at his home in Brooklyn, Aug. 27, at the age of 58, is a severe blow to his many friends and his colleagues in the association.

He had been associated with the Maritime exchange since 1896 and was elected assistant superintendent in 1903. In 1905 he became acting superintendent and the following year was elected superintendent. He was re-elected annually for 28 years. Ten years ago his title was changed to that of manager.

He was born in New Lisbon, N. Y., and was a descendant of Nathan Whipple who served in the New York regiment of Philip Van Cortlandt in the revolution and was present when Cornwallis surrendered to Washington at Yorktown.

## Only American Sailors

Announcement has been made by Daulton Mann, executive vice president of the Grace line, that henceforth all of the company's 19 liners and freighters are to be manned 100 per cent with American citizens.

This means employment of several hundred additional Americans.

The author, William G. Christy is chief smoke abatement engineer, Hudson county, N. J.



## Propeller Club Convention Meets at Pittsburgh

The seventh annual convention of the Propeller Club of the United States will be held in Pittsburgh at the Wm. Penn hotel Oct. 12 to 14.

The Pittsburgh Propeller club, as host, is making elaborate preparations for the entertainment of attending members. Reservations are being made for tickets to the Navy-Pittsburgh football game, Oct. 14.

The convention business sessions will be of more than usual importance. Constitutional changes, which growth in membership and enlargement of activities render necessary, will be presented for consideration. The agenda for discussion contains many other matters of equal significance.

It is expected that not only the delegates from various clubs throughout the country will be in attendance but also that a large number of members will come on their own account.

## Joint Rates Upheld

The interstate commerce commission in refusing to suspend the first joint water-rail rate proposed between Pacific ports and Mississippi valley points has taken a stand which is likely to mean a considerable increase of business to intercoastal lines.

By this decision a freight rate of 75 cents per hundred pounds on canned goods between the Pacific coast and the Mississippi valley via the Panama canal became effective Sept. 20. This is said to be the lowest rate ever offered on canned goods between these points. It was proposed on Aug. 21 by three steamship lines in conjunction with a number of railroads serving Mobile, New Orleans, and Texas seaports on the Gulf of Mexico. In the meantime, transcontinental rail lines filed a protest with the commission and gave notice that their rate on canned goods between these points would be reduced from 90 cents a hundred pounds to 80 cents, effective Oct. 1.

## German Lines Co-operate

The North German Lloyd and the Hamburg-American lines have formed an internal organization abroad to bring about the closest possible co-operation in the various passenger and freight services to and from the United States and Canada. The North Pacific service is excluded.

The main object of this organization is to effect improvements and economies. Bremen has been selected as the seat of management for the first two years, but it is contemplated to alternate headquarters between Bremen and Hamburg.

Heinz Schuengel, for a number of

years director of the North German Lloyd in the United States and Canada, has been appointed managing director of the new organization. Waldemar Klose, Bremen, will act as assistant director for passenger traffic and Friedrich Loepthien, Hamburg, will be assistant director for freight traffic.

The General Electric Co. and four of its associated companies have announced the removal of their offices in New York city to the new General Electric building, 570 Lexington avenue at Fifty-first street. New York City headquarters were formerly at 120 Broadway.

## Pacific Shipping Improves

Improvement manifested during the past two or three months in the Pacific freight market continued through the month of August. Business moved in an orderly manner with a slight tendency upward in rates. While there does not appear to be any great demand for ships or space on ships, berth vessels in the various trades are running comfortably full and space is not going begging at any price.

All signs point to a continuation of fair business with increased activity in the fall. A continuation of time-chartering in fair volume was experienced during the month. Time charterers, however, show no inclination to speculate over long periods of time as yet, preferring to charter for short trips only. The tanker market was quiet during the month.

## Rex Breaks Record

The Italian liner REX, 880 feet in length, 97.6 feet in beam, and of 51,062 gross register tons, during August set up a world's record in speed and time. Leaving Gibraltar at 6:30 p.m., Aug. 11, she arrived at Ambrose lightship, New York, at 4:40 a.m., Aug. 16, having covered a distance of 3181 nautical miles in four days, 13 hours and 58 minutes, at an average speed of 28.92 knots.

Her daily maximum distance on August 15 was 736 nautical miles at an average of 29.61 knots. On this record voyage she was under command of her regular skipper, Commander Francesco Tarabotto, and her chief engineer was Luigi Risso. During three days of the voyage the weather was rather rough, partly cloudy and showery. This record passage was made on the twelfth voyage of the REX from Genoa to New York.

At a meeting of the stockholders of the Newhall Chain Forge & Iron Co. on Aug. 31, Harry C. Brown former vice president, was elected president to fill the vacancy caused by the recent death of Henry B. Newhall.

## American Ship Building Co. Annual Report Issued

In the thirty-fourth annual report of the American Ship Building Co., Cleveland, issued Sept. 15, for the fiscal year ended June 30, 1933, W. H. Gerhauser, president of the company, stated in part:

"While the fiscal year just closed has been the poorest in the history of Great Lakes shipping, there has been a gratifying improvement during the present operating season. The company's gross repair business in the past year has been about 30 per cent of normal, and, in spite of further drastic reductions in cost and expenses, the company has suffered a loss of \$241,033.99. This loss, however, is after charging off plant depreciation at full rates, amounting to \$215,466.35 and after setting up the usual reserve.

"A marked improvement in lake shipping began about June 1 and has continued to the present date. About two-thirds of the bulk lake freighters are in service. There are more than twice as many ships running today as there were at any time last season. The work of fitting out these vessels together with a considerable volume of damage repairs, has enabled the company to operate on a more satisfactory basis for the past three months.

"There has been no new ship construction during the past fiscal year. On June 2 the company obtained a contract for the conversion of one bulk freighter to a self-unloader, which contract has since been completed. No new construction is looked for, at least, until the present fleet is in steady operation.

"The property of the company is unencumbered and there are no known contingent liabilities."

Mr. Gerhauser pointed out that due to the operating loss for the past fiscal year no dividends were paid on the non-cumulative preferred stock. He also stated that the company is still in a sound and strong financial condition after three years of depression, and that the company is in an excellent position to go ahead if the present efforts to restore business to more normal levels are successful, and that the company is wholeheartedly cooperating in the President's program.

Ian L. McKenzie, who for the last ten years has been naval architect for Henry C. Grebe & Co. Inc. and the Great Lakes Boat Building Corp., has announced the opening of an office at 701 North Michigan avenue, Chicago, as naval architect, marine engineer and yacht broker.

Mr. McKenzie has had broad experience in the design, supervision and construction of all types of naval and commercial vessels and yachts.



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# Reviews of Late Books

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*Procedure Handbook of Arc Welding Design and Practice*; compiled, edited and published by The Lincoln Electric Co., Cleveland; 434 pages; 9 x 5 3/4 inches; numerous illustrations, diagrams and plates; semiflexible simulated leather cover embossed in gold; supplied by MARINE REVIEW for \$1.50 and in Europe by The Penton Publishing Co. Ltd., Caxton House, London.

The publication of this book makes available in one volume complete and up to the minute information on both design and procedure in arc welding. It is encyclopaedic in conception and contents and contains about 500 illustrations or more.

Divided into eight principal sections or parts, each dealing with an important phase of arc welding and its application in a clear concise manner, fully illustrated, this book is an unusually thorough and well prepared compendium of the latest approved practices in arc welding.

It is well recognized that the rapid developments in arc welding during the last few years have made it necessary to reconsider, revise and restate the practice of the art. The publication of a new procedure handbook is therefore particularly timely. It has been prepared with a view not only of serving all welders and those in charge of welding departments, but also for others responsible for the design of products in which welding is used. In this connection data in the book on procedure, speed, and welding costs are particularly valuable.

The eight sections of the book cover the following subjects: (1) welding methods and equipment; (2) technique of welding; (3) welding procedure, speeds and costs; (4) structures and properties of weld metal; (5) weldability of metal; (6) designing for arc welded steel construction of machinery; (7) design for arc welded fabrication of steel structures; (8) typical applications of arc welding in manufacturing, construction and maintenance.

Among the subjects treated in detail are, descriptions of various welding processes, definition of welding terms, classification of welds, strength of welded joints and methods of stress relieving. Included are also tabulations of steel welding, all types of joints in all positions, methods of estimating cost of weld production, structures and properties of weld metal, specifications for steels and alloys of good weldability, the welding of non-ferrous metals, and many other features. There is also a treatise on the fundamental advantages of arc welded and riveted steel structures. Details are given of structural arc welding and the use of arc welding in ship-

building and shiprepair plants. A comprehensive index has been included.

Everyone concerned with the application and improvement of welding practice will find this book a useful guide and a source of much valuable specific information of an authoritative nature.

*Directory of Iron, Steel and Non-ferrous Alloys*; third edition; published as a supplement to MACHINE DESIGN by the Johnson Publishing Co., Penton building, Cleveland; 30 pages; 8 x 5 1/2 inches; paper cover; supplied by MARINE REVIEW for 25 cents per copy and in Europe by the Penton Publishing Co. Ltd., Caxton House, London.

This third edition of MACHINE DESIGN's alloy supplement is a complete revision of earlier editions. It has been brought up to date through the co-operation of producers of alloys and it is intended as a ready reference for designers and others responsible for the selection of suitable materials.

In order to make the directory still more useful for reference purposes alloys have been classified by properties. The less common properties of each alloy is given in the text matter, and the more common properties are signified by numbers appearing immediately above each listing, with a key printed at the foot of all pages. Alloys are also listed alphabetically by trade names.

*A Compendium of Useful Information*, including a directory of ports of the Propeller Club of the United States; compiled and published at national headquarters by The Propeller Club of the United States, New York, N. Y.; 44 pages; 9 1/4 x 4 inches; paper cover.

This little booklet was compiled in response to many requests from members of the Propeller club for information concerning the various ports in which Propeller clubs have been organized.

It serves also to show the various activities of the Propeller Club of the United States, an organization pledged to the single purpose—the development of the American merchant marine.

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## S. S. Wm. H. Warner Sold

It has been reported that the steamer WILLIAM H. WARNER of the Panda Steamship Co., headed by G. A. Tomlinson, has been sold to the International Harvester Co., Chicago. The estimated price was \$550,000.

The WARNER is a typical Great Lakes bulk freighter, 600 feet in length with a capacity of 13,500 tons. She was built in 1923. The International Har-

vester Co. is also operating the steamer HARVESTER. The WARNER has the best record run from Duluth to Conneaut, O., with a cargo of ore.

Control of the Chicago, Duluth & Georgian Bay Transit Co., owner of the steamers NORTH AMERICAN and SOUTH AMERICAN, has been acquired by Detroit interests headed by William B. Mayo, former chief engineer of the Ford Motor Co.

Mr. Mayo becomes president of the company; D. Dwight Douglas, vice president; and Emery B. Hatch, secretary-treasurer. Charles Bour, who has been president, has been elected chairman of the board.

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## To Build Dry Dock

It was reported on Sept. 20 that the public works board at Washington had approved a loan of \$750,000 to the Tampa Shipbuilding & Engineering Co. for building a dry dock and improvements to shipyard at Tampa, Fla. It is estimated that from 200 to 300 men would be given employment for 18 months to carry out this work.

At a recent meeting of directors of the Boston Tidewater Terminal Inc. held at the Army base, William P. Libby, assistant treasurer and traffic manager of the Plymouth Cordage Co., was elected director to succeed the late Capt. Eugene E. O'Donnell. Mr. Libby is one of the best known traffic executives in the country. He was formerly president of the Traffic club of New England and is a member of the governing board of the Maritime association of the Boston chamber of commerce.

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## Improved Floodlights

SEVERAL improvements in its line of handy floodlights have been announced by the General Electric Co. An adjustable socket is now being furnished to accommodate both 500 and 1000-watt general service incandescent lamps.

When the socket is fully in, the 1000-watt lamp is in focus; when the socket is fully out, the 500-watt lamp is in focus. A 1500 watt hard glass lamp can be used with the projector if the lens is removed. Other changes include a slightly increased gage of the aluminum casing and the use of a substantial hexagonal nut to give positive clamping to the standard mounting.

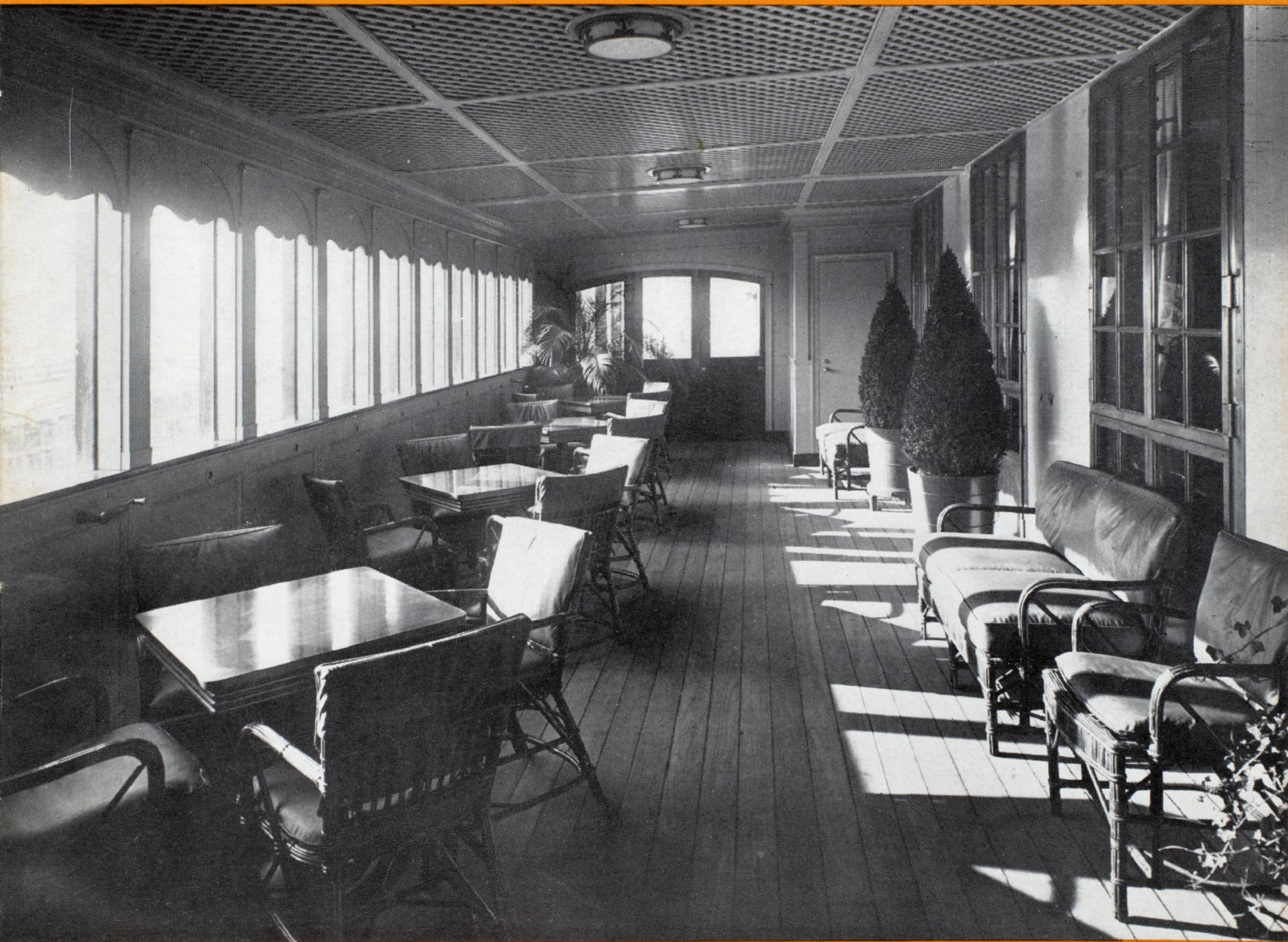
It would seem that floodlights of this type might be particularly useful on piers and docks when brilliant light is necessary for cargo handling and for the embarkation or debarkation of passengers after dark. The brilliance of the lighting as circumstances require can be controlled so quickly with a corresponding saving in cost of current.



# Marine Review

Reg.  
U.S.  
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Off.

*The National Publication Covering the Business of  
Transportation by Water*



Palm Court, S. S. Santa Rosa

October, 1933



# Replace Old Boilers and Worn-Out Tank Tops—NOW

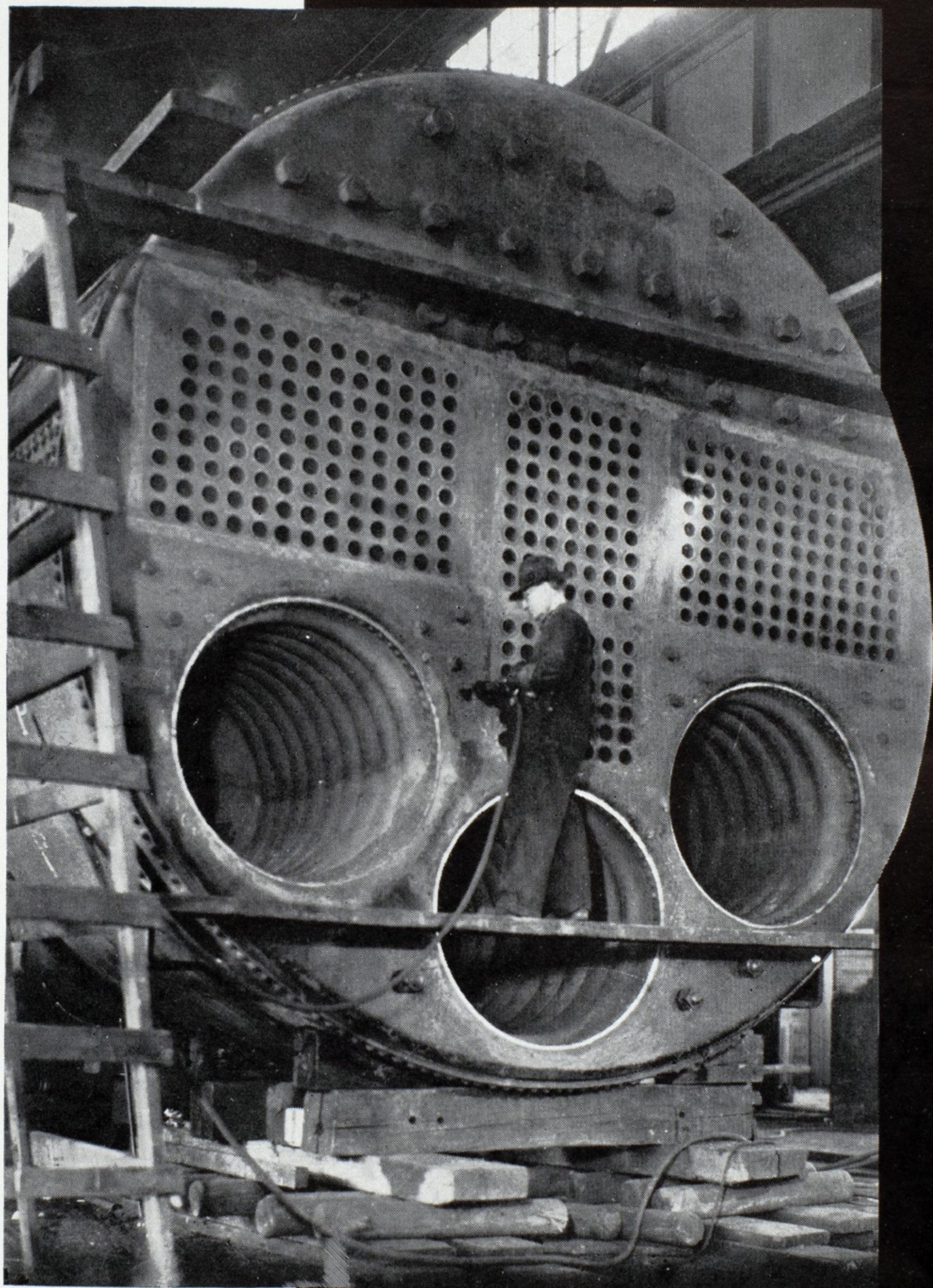
It is true that many ships are operating on the Great Lakes with boilers and tank tops that should be replaced.

It is equally true that each year this equipment becomes increasingly expensive to maintain because of constantly decreasing efficiency.

Eventually this leads beyond mere waste into the field of actual hazard to life and property.

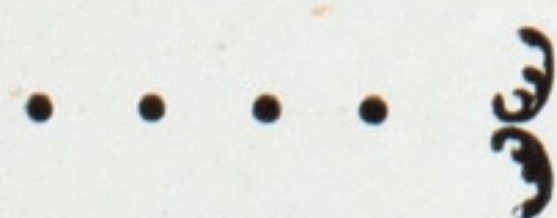
Everybody knows that—and everybody intends to have the old boilers and worn-out tank tops replaced.

Why not do it now? Five convenient yards of the American Ship stand ready to serve you.



## *The* AMERICAN SHIP BUILDING CO.

Main Office: Foot of West 54th Street, Cleveland, Ohio



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American Ship  
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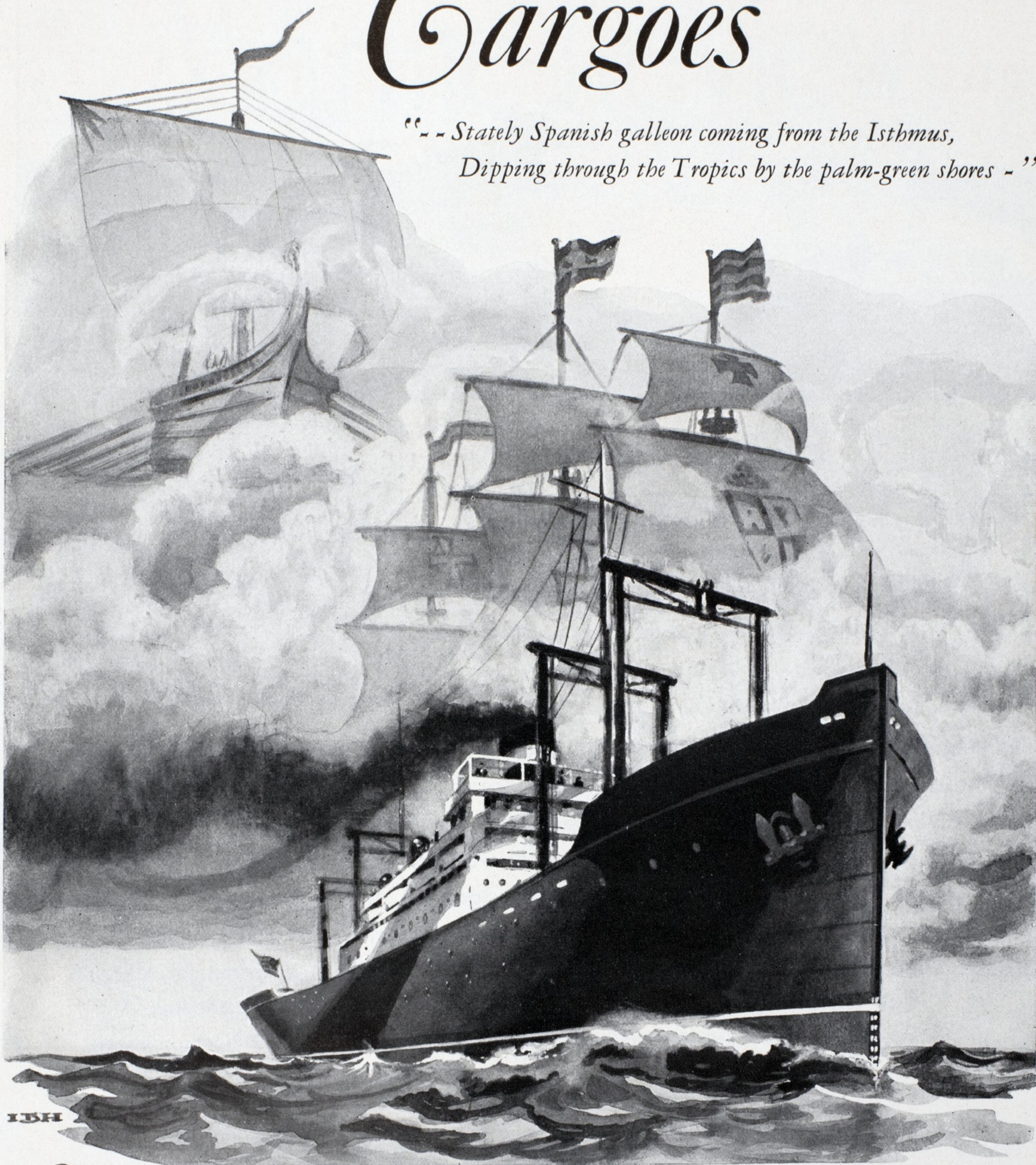



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# Cargoes

*" - Stately Spanish galleon coming from the Isthmus,  
Dipping through the Tropics by the palm-green shores - "*

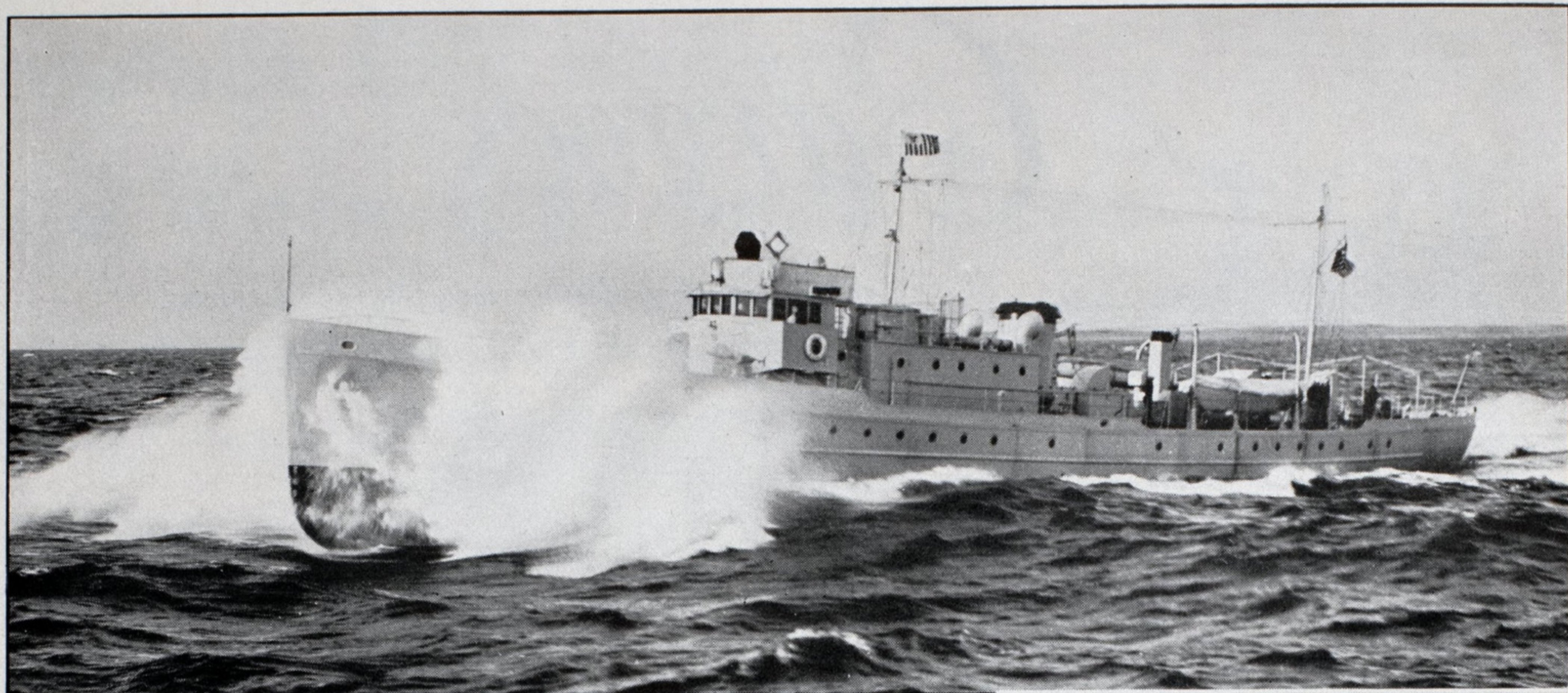


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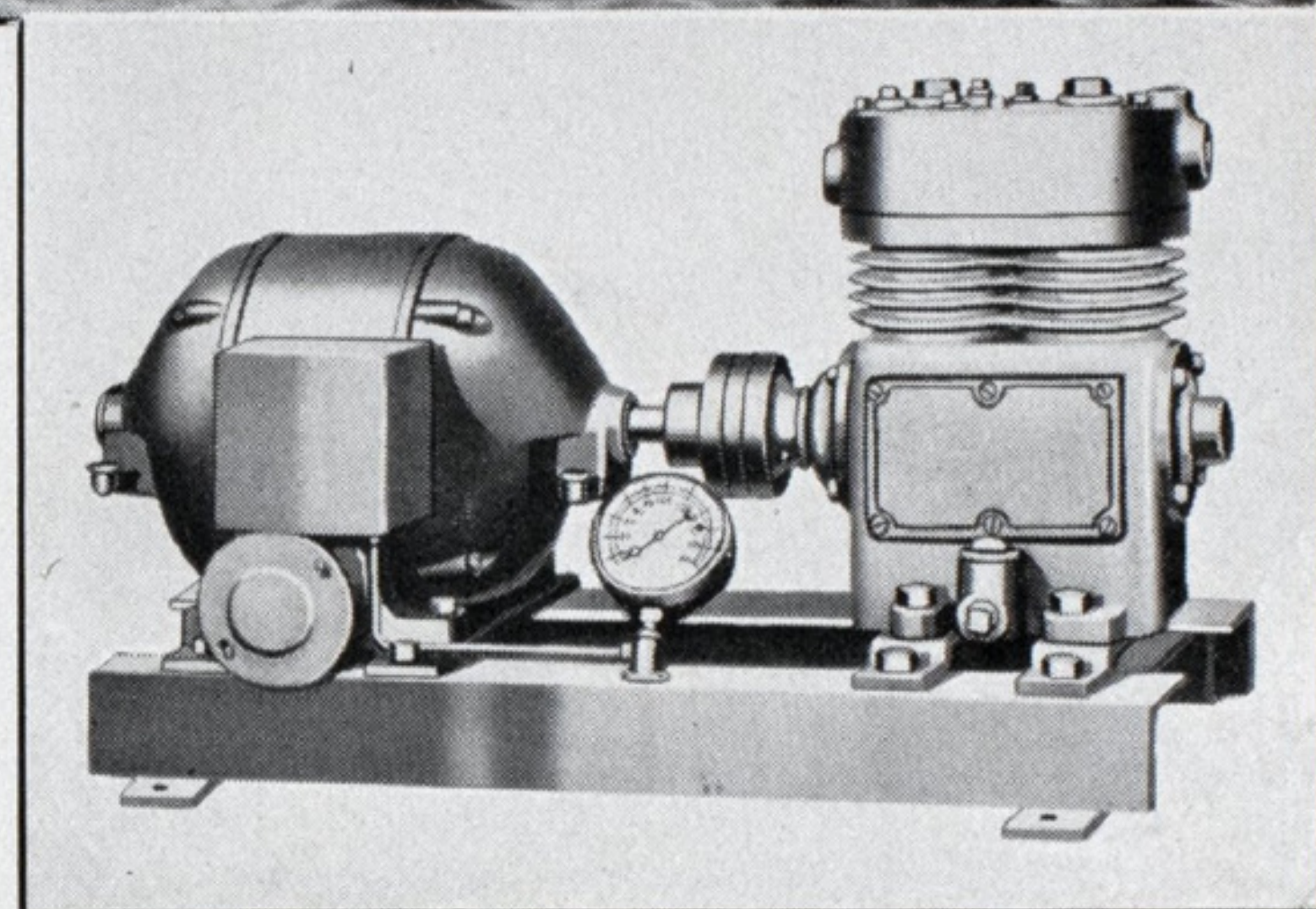
**BETHLEHEM SHIPBUILDING CORPORATION, Ltd.**

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## Air Compressors for Any Type of Craft



**W**ESTINGHOUSE compressors are suitable for marine service wherever compressed air is needed—on small craft for signal horns . . . on freighters for scaling hammers, paint sprayers, or hoists . . . on passenger liners for water raising systems, boiler tube cleaners, or steering gear . . . on pile drivers for wood borers and saws . . . in lighthouses for fog horns . . . or in shop yards for pneumatic tools . . . Many types and sizes are available ranging from 2½ to 300 cu. ft. displacement, steam driven or motor driven . . . These machines are compact, self-contained, automatic, efficient, reliable, economical, durable . . .

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**WESTINGHOUSE**  
**AIR COMPRESSORS**

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"QUALITY MACHINES FOR QUALITY SERVICE"



# Mr. Shipbuilder:

## Here's a letter for you

GENERAL  ELECTRIC  
COMPANY

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SCHENECTADY, N. Y.

GENERAL OFFICE  
SCHENECTADY, N. Y.

August 18, 1933

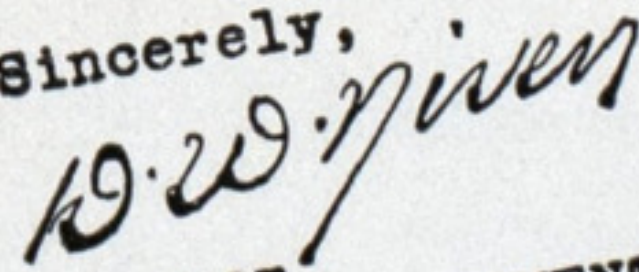
Dear Mr. Shipbuilder:

Now that the tide of business has turned, you will soon be busy again. Before many keels are laid -- before the job of reconditioning and modernizing ships and ship machinery starts going full blast -- won't you take a last look around your shipyard? This is a very favorable time to bring your construction tools and equipment down to date.

There are several comparatively new electric products you will want to look into -- gear motors, Thrustor valves, and small heating units, among others. Amazingly fine results are being obtained by arc-welding metal structures. These are only a few of the kind of tools which reduce costs, speed production, and produce more uniform results.

And the time to buy is now -- right while we are near the bottom of the upswing. Prices are all in the buyer's favor at present. It is good business to make your purchases quickly.

Our industrial specialists in G-E offices throughout the country have been asked to give your requirements special attention. They will work with you closely if you will invite them to study your electrical problems.

Sincerely,  
  
Manager  
MARINE DEPARTMENT

DWN:m



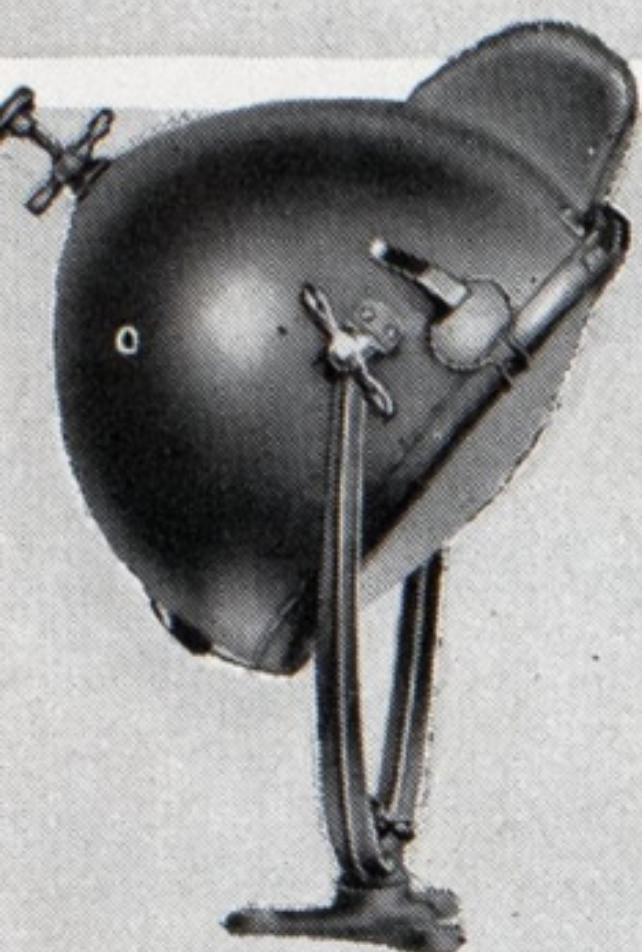
For reliable, trouble-free electric apparatus, or for electric equipment specially engineered for marine service, specify products which bear the G-E monogram.

Here are some of the tools which can save you money and help you maintain production schedules

# GENERAL

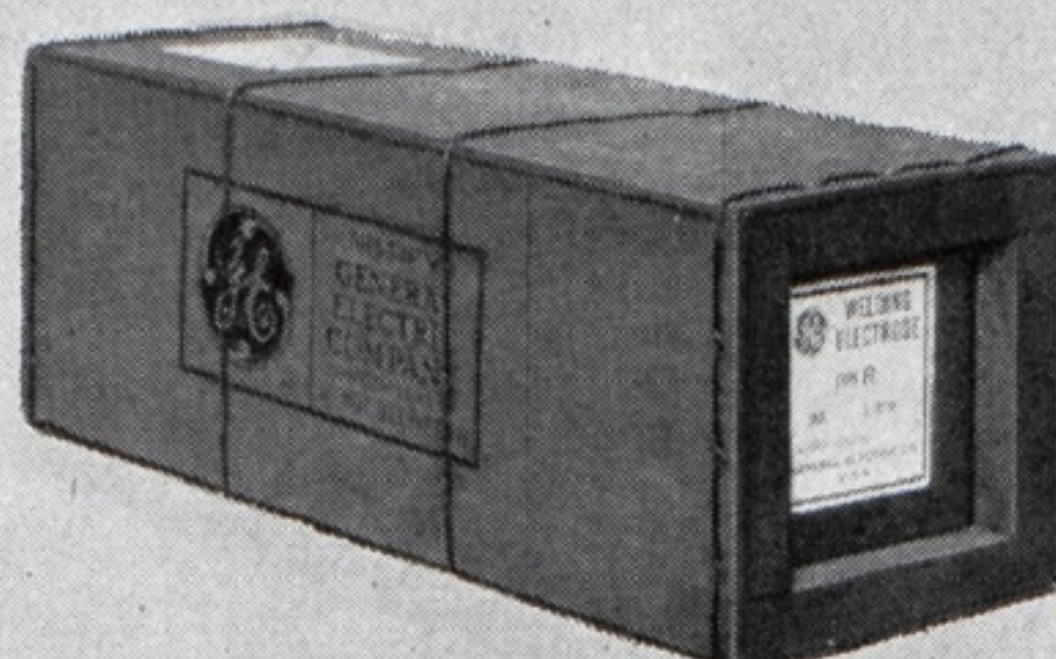


# from Mr. Niven.....



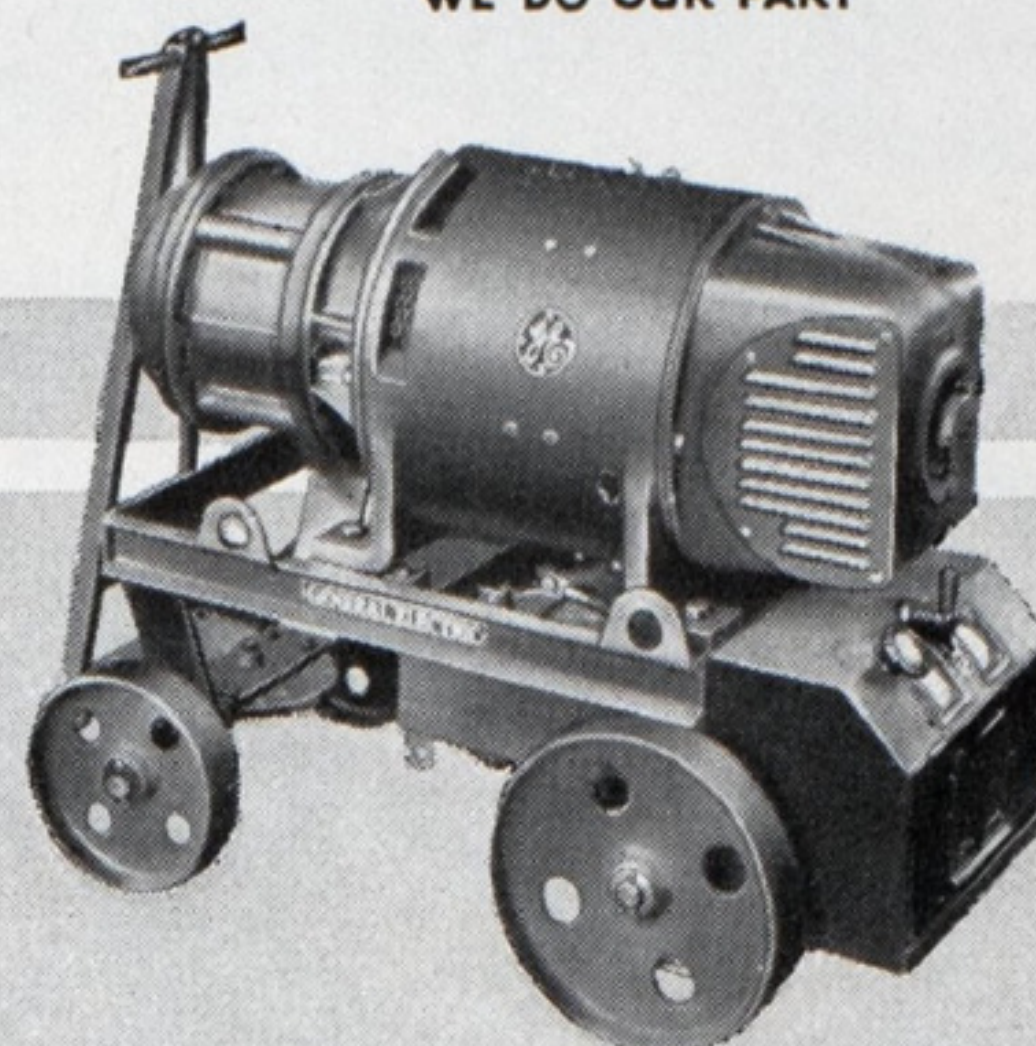
## FLOODLIGHTS

All kinds of dependable light sources for protection of shipyards and for night work, made by the foremost manufacturer of lighting equipment. Moderately priced units of open or enclosed type, finished to withstand adverse weather



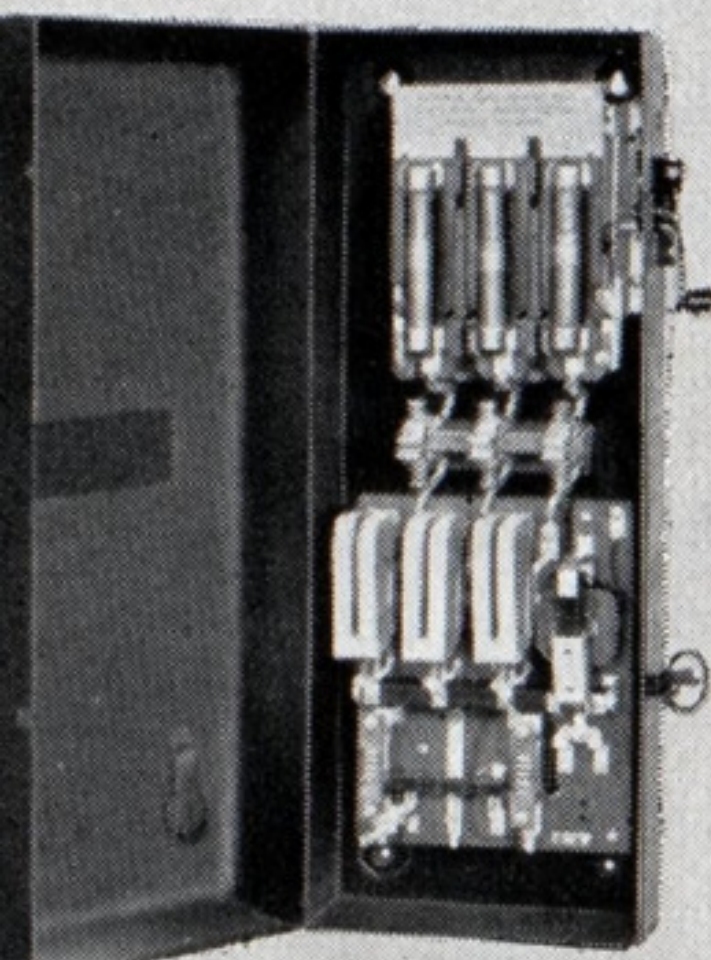
## WELDING ELECTRODES

G-E electrodes are available for every application, and for both hand and automatic welding. The heavy-coated type is especially suitable for hull construction. These electrodes have been thoroughly tested and are widely used in our own factories



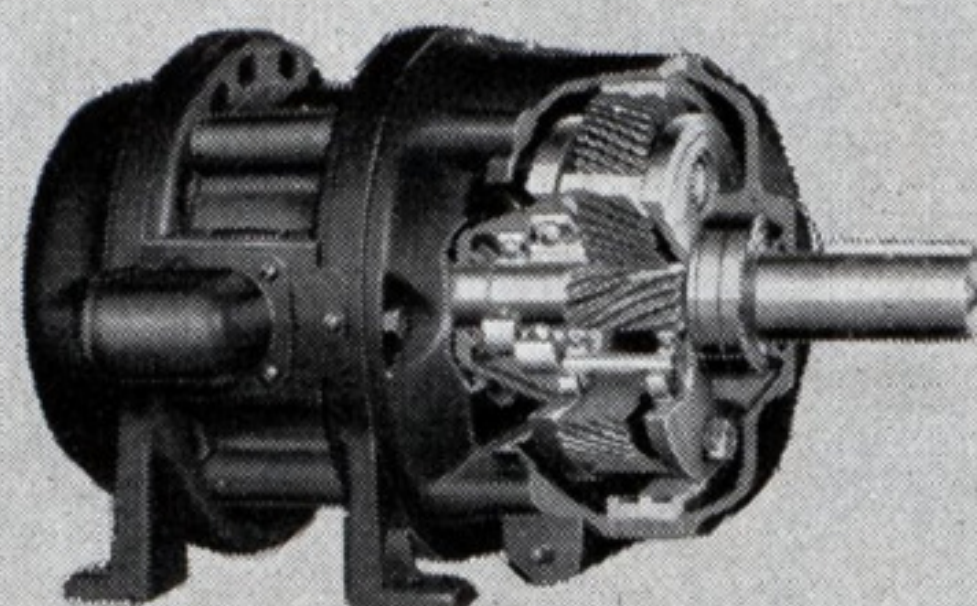
## ARC WELDERS

Not all welding sets produce equally good results. For your jobs, a G-E welder which is light, compact, portable, and flexible, designed for both bare and heavy-coated electrodes, will richly reward your decision to buy a welder of G-E manufacture



## COMBINATION MAGNETIC SWITCHES

A combination of a magnetic switch, a test jack, and a disconnecting device in a single case. Permits easy checking of power required by any motor-driven machine without shutting down the equipment

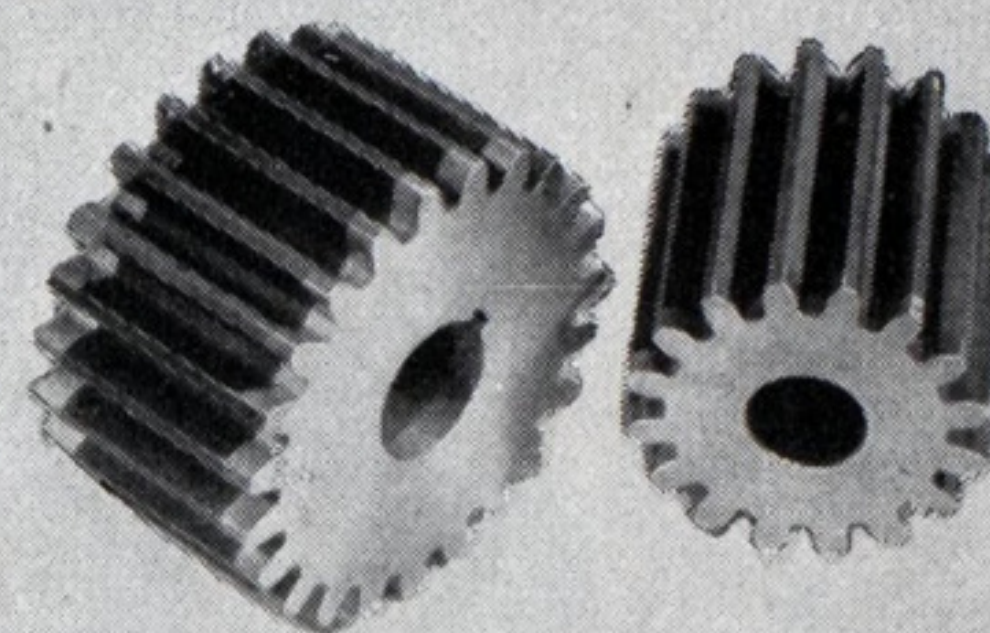


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Where a low-speed drive from 13 rpm. to 600 rpm. is required, insist on a G-E gear-motor—a combination of a normal-speed motor and a speed-reducer, built into a single, compact, efficient unit that delivers full rated horsepower at the desired low speed at the output shaft

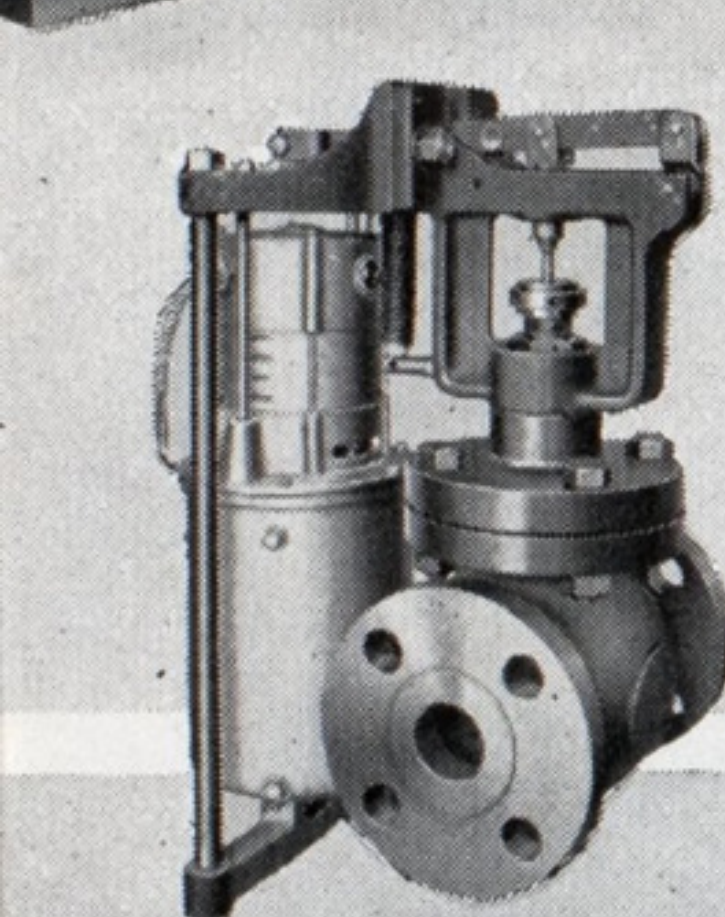
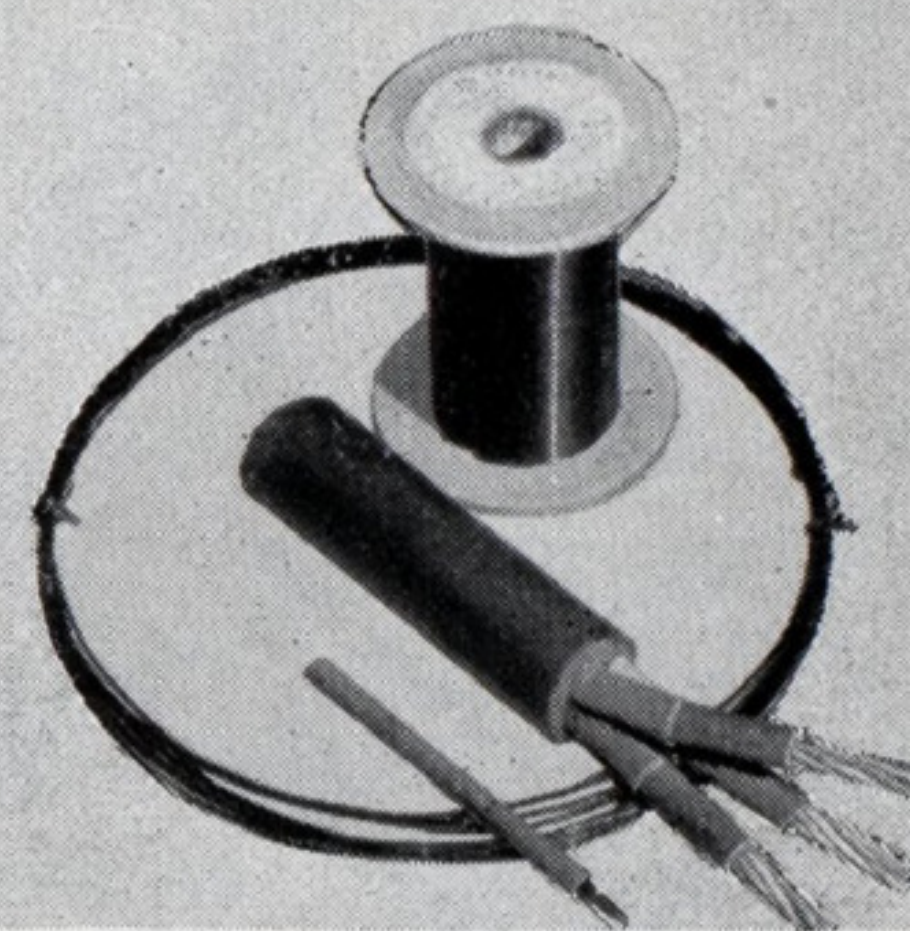
## PLASTIC PRODUCTS

The famous Cetex, Fabroil, and Textolite lines, which include all kinds of insulations in tube and sheet form; gears and gear blanks; finish surfaces; etc. Fabroil gears and pinions stand up under the most severe service conditions



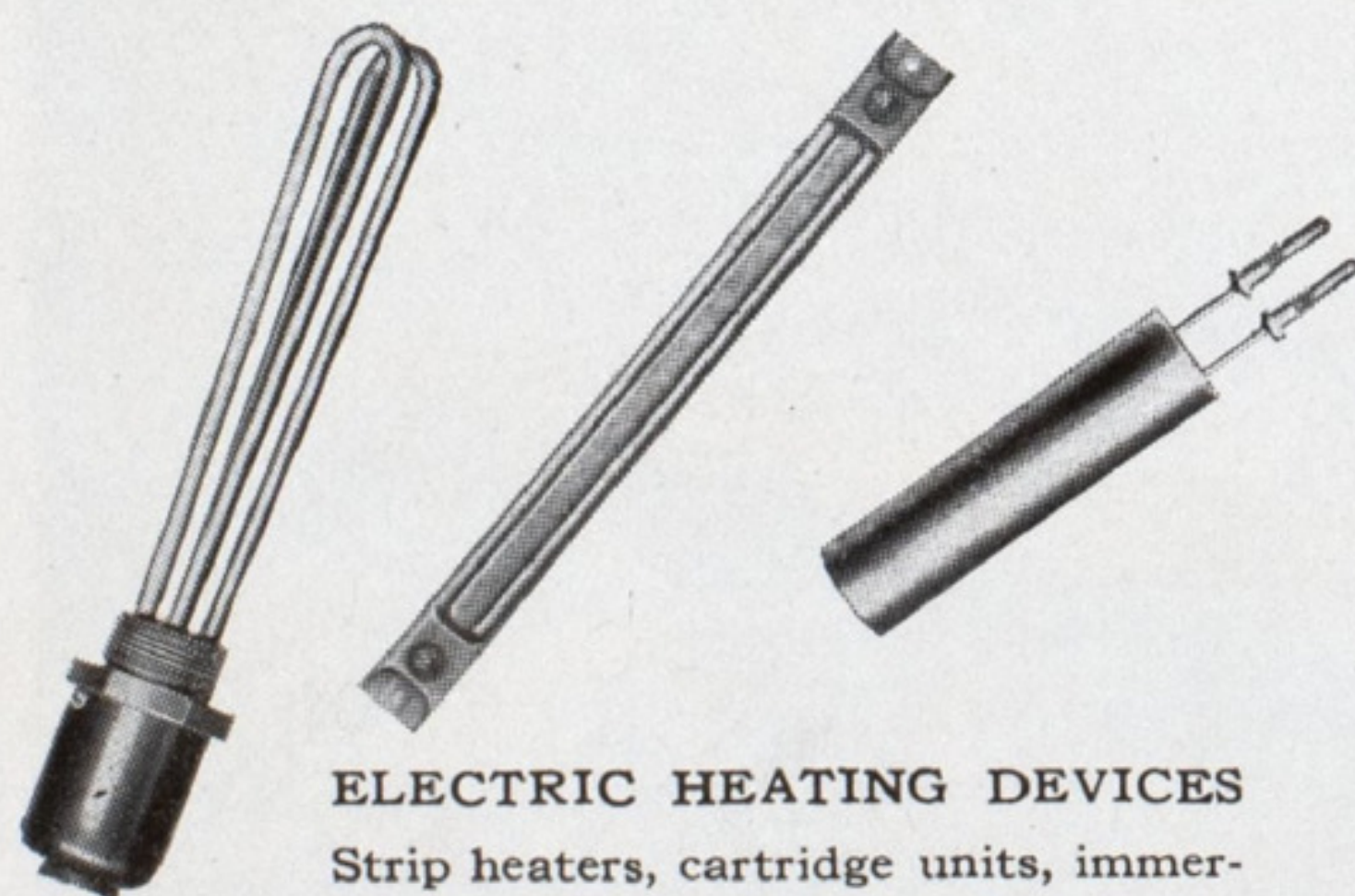
## WIRE AND CABLE

Every type and every size for every purpose. G-E tellurium-compounded portable cable and cords, and arc-welding cable, are tough enough for the hardest jobs you can give them



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# ELECTRIC

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# She'll HOLD!

This famous Ship Trade Mark is the symbol of Plymouth Quality. Look for it on every coil



**H**EAVY WEATHER... tug and barge wallowing... a heavy load on the towline, made heavier by sudden strains -gruelling punishment for rope.

But *She'll Hold!* It's Plymouth Manila Towline. Towboat men know they can trust this rope.

Made of carefully chosen Manila fiber by skilled ropemakers — Plymouth Manila Towline combines extra strength and durability needed for heavy towing with the flexibility so necessary for easy handling.

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**PLYMOUTH CORDAGE COMPANY**  
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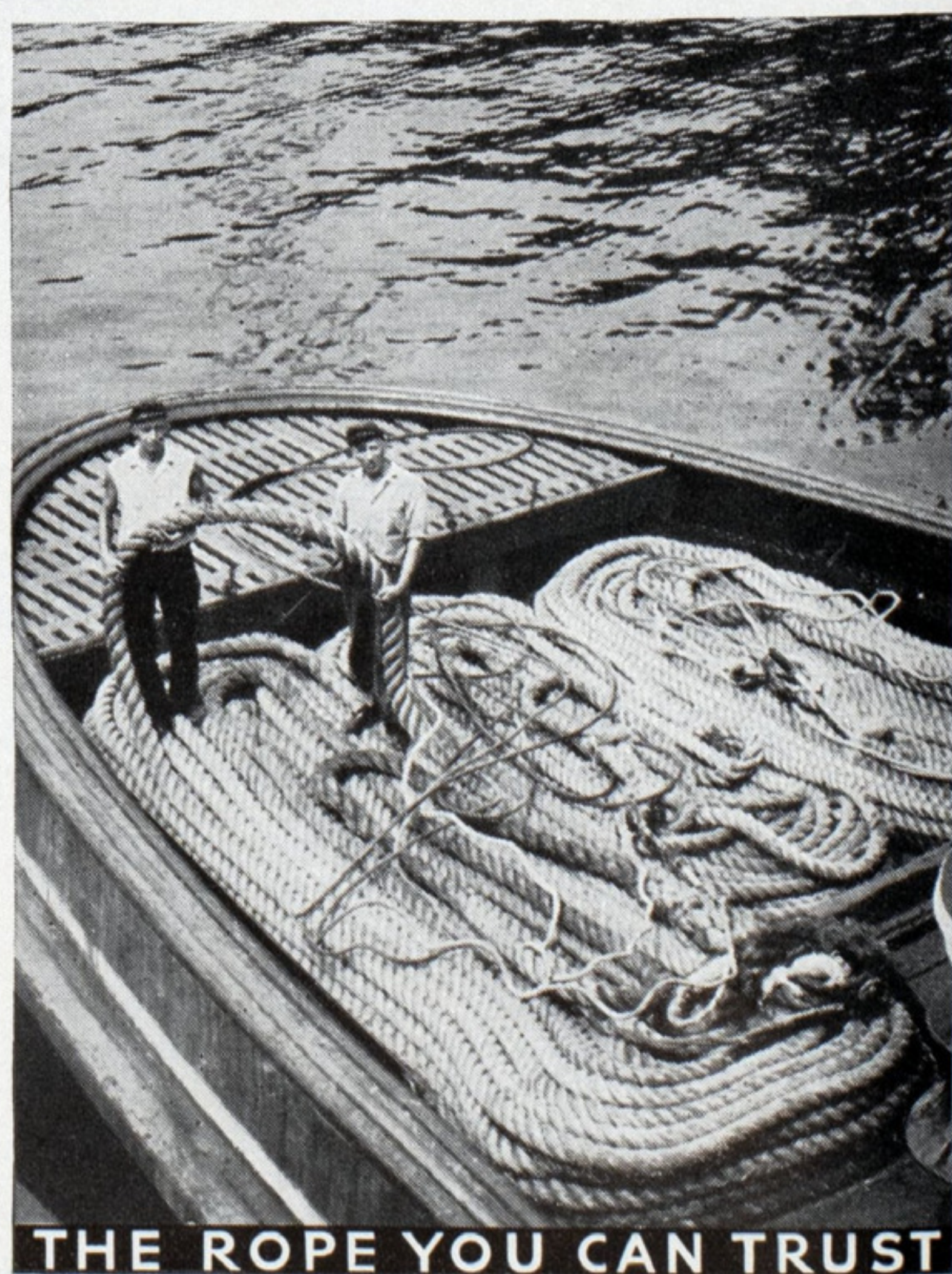
Sales Branches: New York — Chicago — Boston — Baltimore — New Orleans — San Francisco



## PLYMOUTH

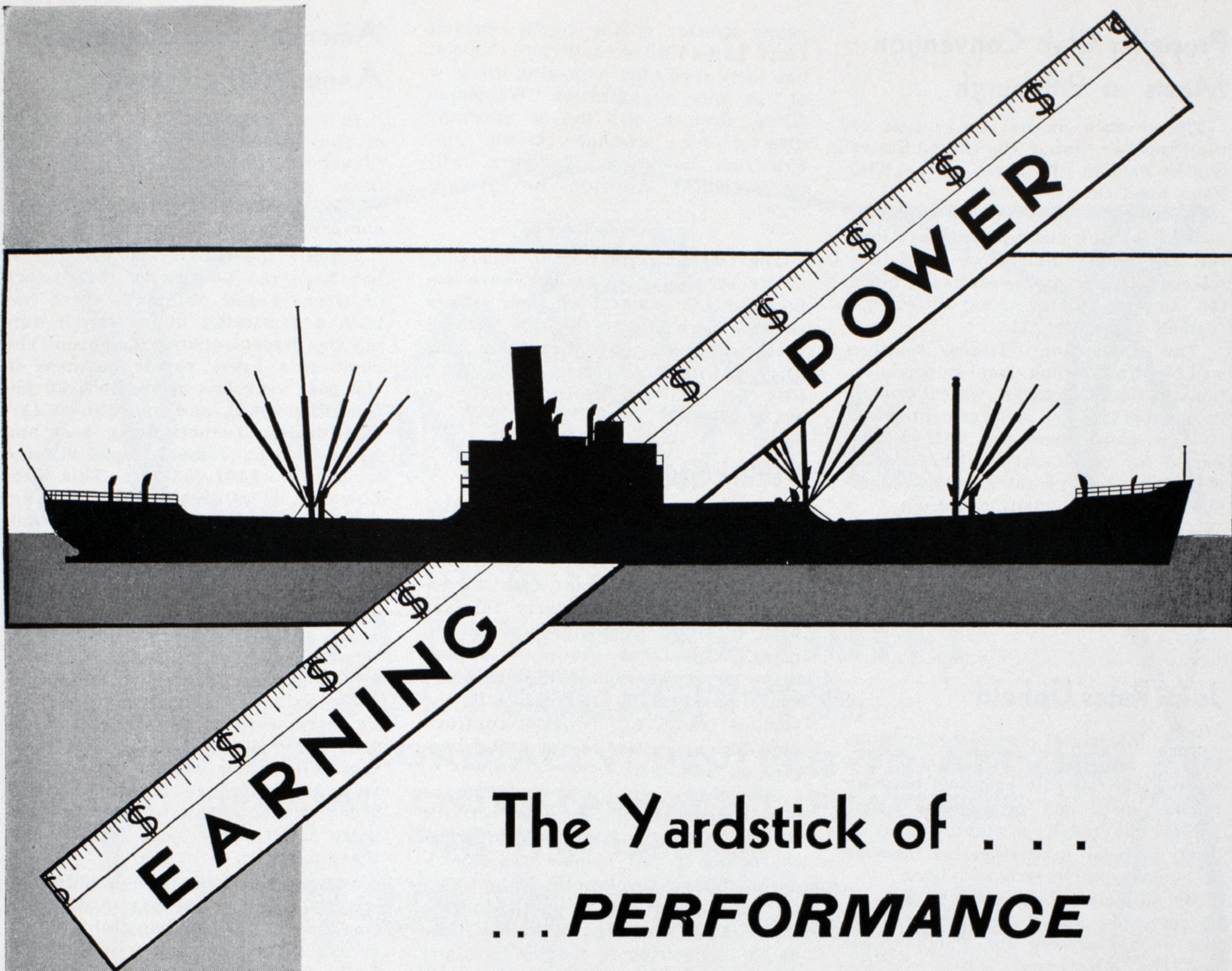


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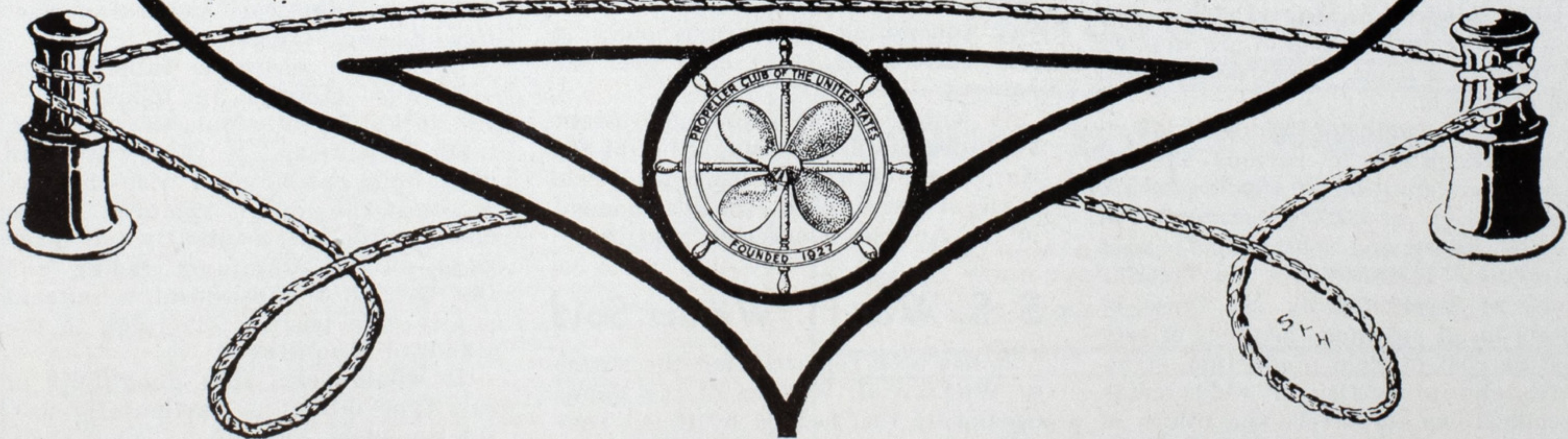
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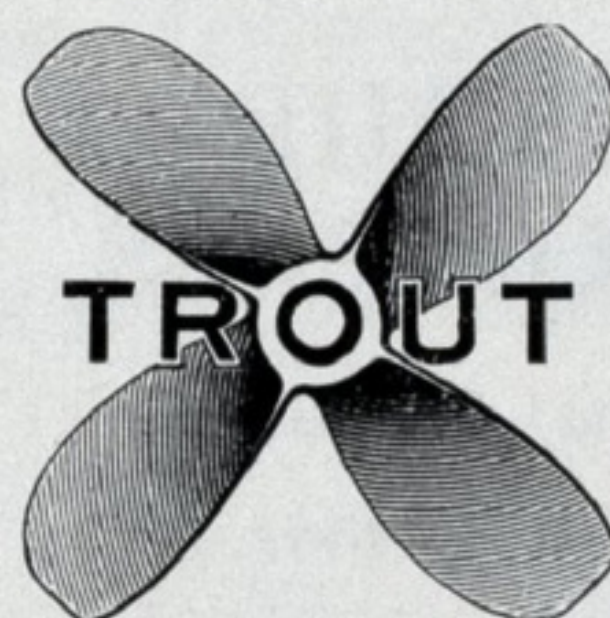
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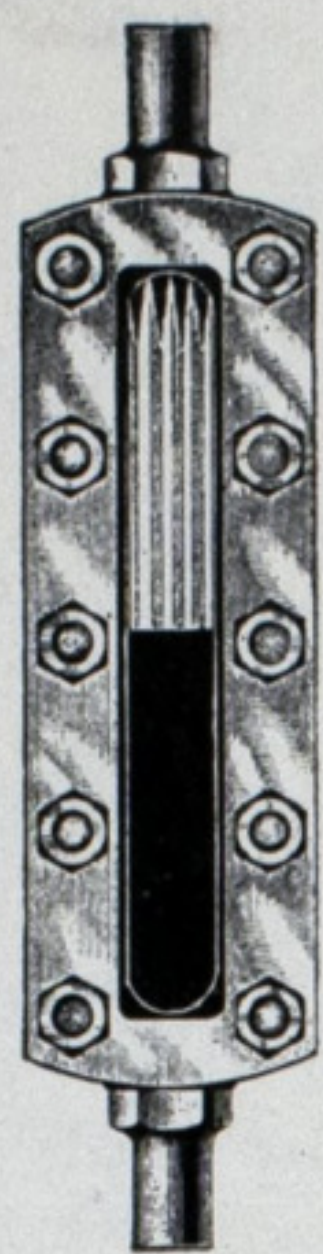
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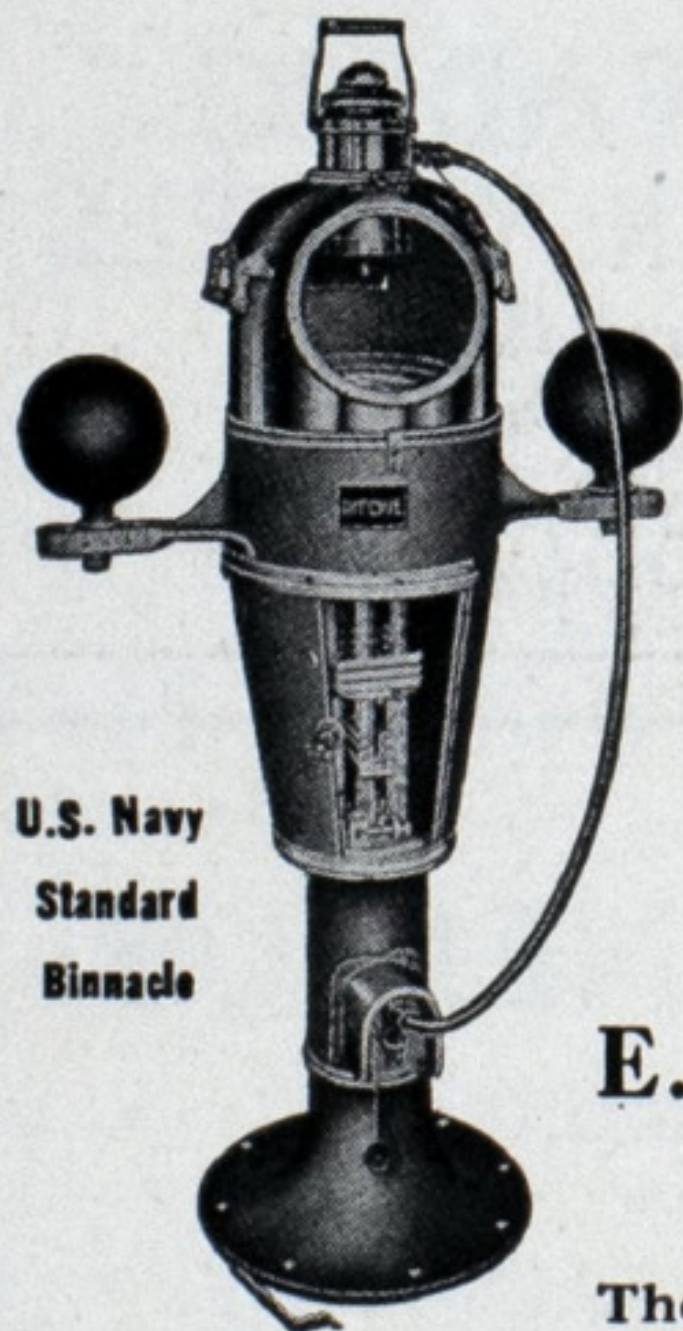
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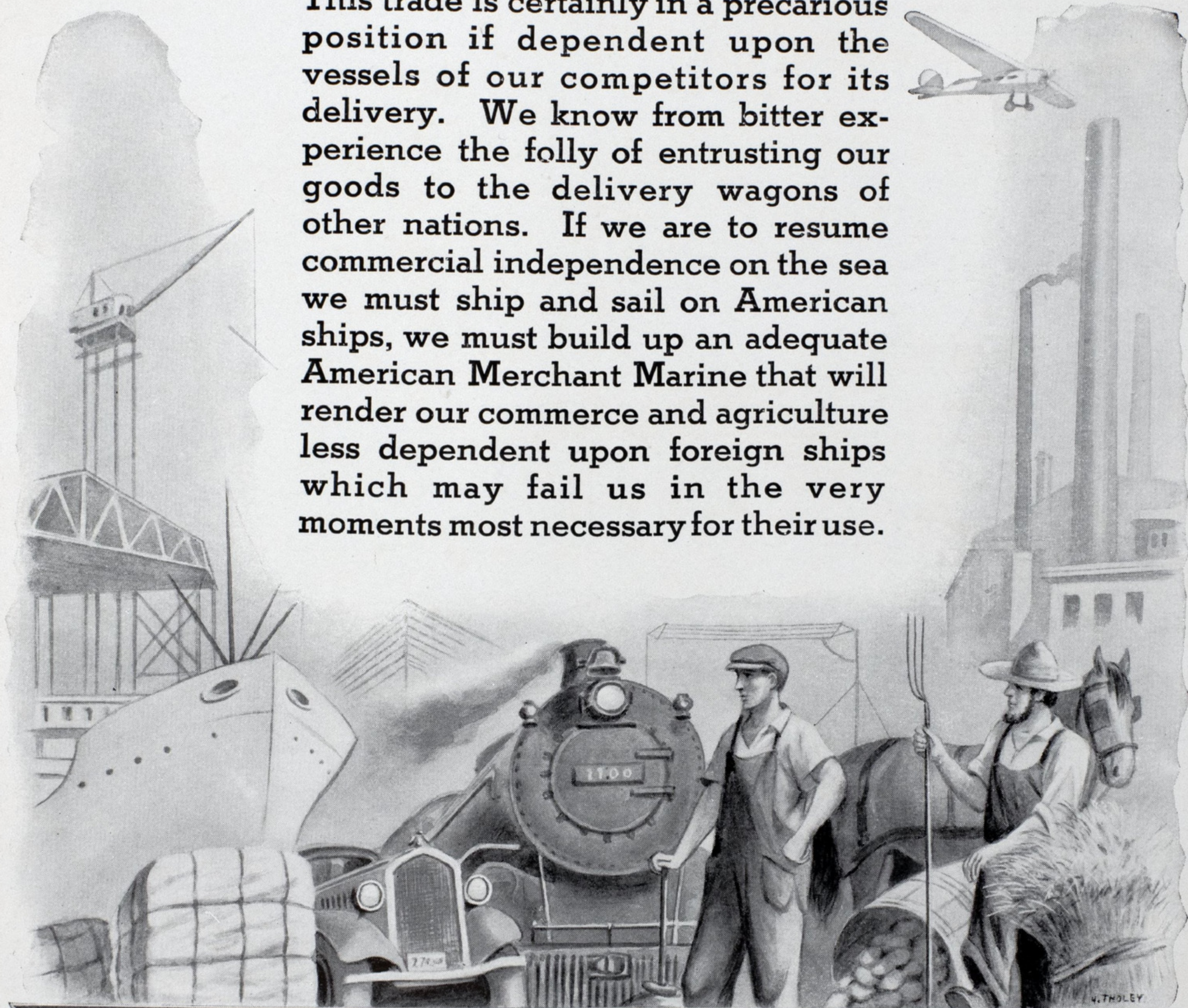
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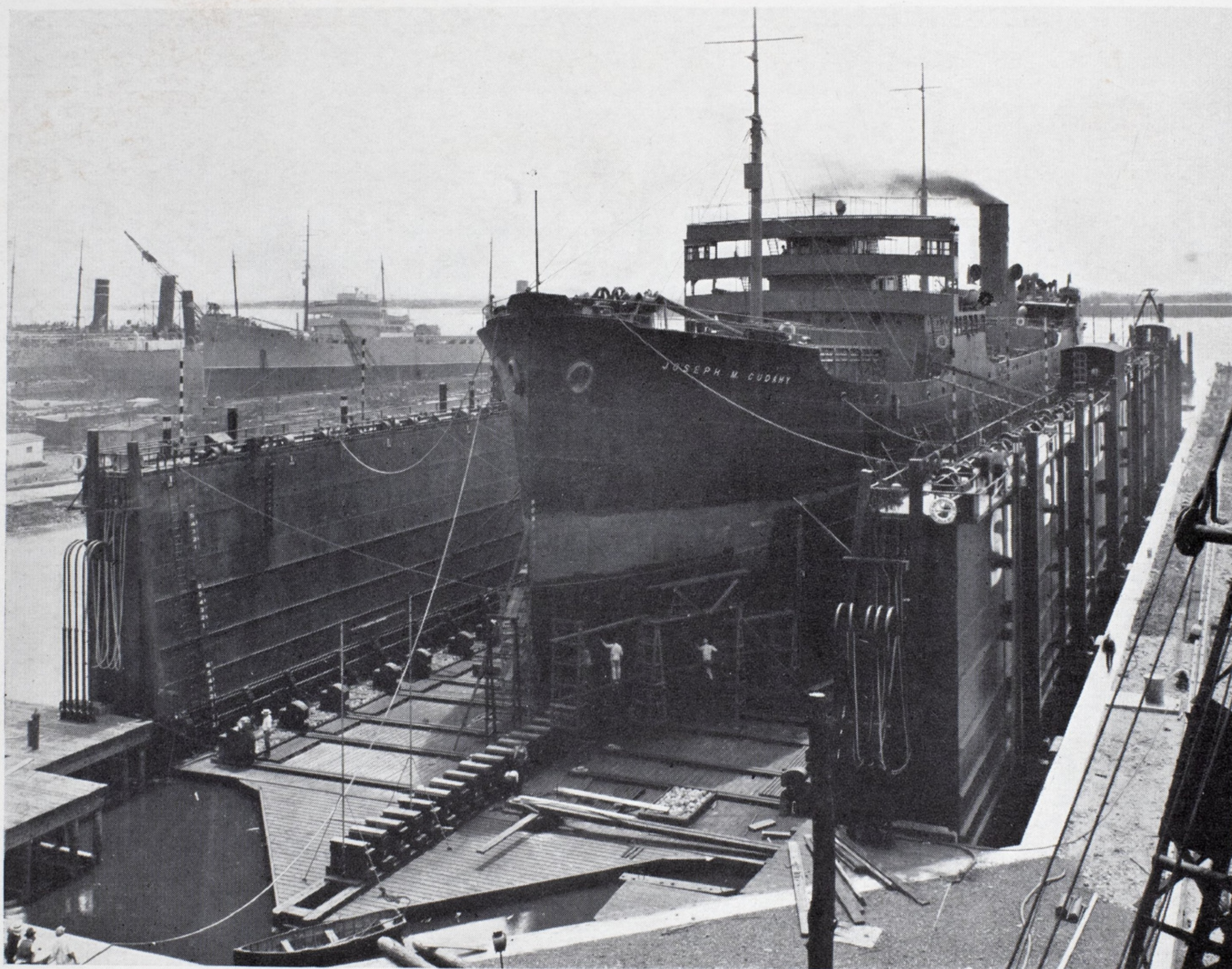
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